REPUBLIC OF ZAMBIA

MINISTRY OF COMMUNITY DEVELOPMENT, MOTHER AND CHILD HEALTH

SOCIAL CASH TRANSFER PROGRAMME

IMPACT EVALUATION
(Randomized Control Trial)

30-Month Report for the Child Grant

DECEMBER 2014

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SOCIAL CASH TRANSFER

Contents

Contributors

The evaluation of the Child Grant Program is being conducted by American Institutes for Research (AIR) for the government of the Republic of Zambia, under contract to UNICEF and funded by UK aid from the UK government, Irish Aid, and the Government of Finland. The Principal Investigators for the overall evaluation are David Seidenfeld (AIR) and Sudhanshu Handa (University of North Carolina at Chapel Hill). The Zambia-based Principal Investigator is Gelson Tembo of Palm Associates and the University of Zambia. The overall team leaders of this report are David Seidenfeld (AIR) and Sudhanshu Handa (UNC), but many others made important contributions and are listed below by institutional affiliation and alphabetical order within institution:

AIR: Juan Bonilla, Cassandra Jessee, Leah Prencipe, Dan Sherman

Palm: Alefa Banda, Chiluba Goma, Doreen Goma, Liseteli Ndiyoi, Nathan Tembo

Innocenti: Luisa Natali

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Contact information:

David Seidenfeld
dseidenfeld@air.org

Sudhanshu Handa
shanda@email.unc.edu

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The patience exercised by the Zambian households, community leaders, and community members during interviews are also greatly acknowledged. It is our hope that the insights from the information that they provided will translate into valuable interventions in their communities.

David Seidenfeld, Ph.D.

Acronyms

AIR	American Institutes for Research
ARI	Acute Respiratory Infection
CGP	Child Grant Social Cash Transfer Program
CWAC	Community Welfare Assistance Committee
DD	Differences-in-differences
FAO	Food and Agricultural Organization of the United Nations
LCMS	Living Conditions Monitoring Survey
MCDMCH	Ministry of Community Development, Mother and Child Health (MCDMCH)
MICS	Multiple Indicators Cluster Surveys
RCT	Randomized Controlled Trial
UNICEF	United Nations Children's Fund
ZDHS	Zambia Demographic and Health Survey
ZMW	Zambian Kwacha

Executive Summary

Background

This report provides the 30-month follow-up results for the Child Grant cash transfer program impact evaluation. In 2010, the government of the Republic of Zambia through the Ministry of Community Development, Mother and Child Health (MCDMCH) began implementing the Child Grant cash transfer program (CGP) in three districts: Kaputa, Kalabo, and Shongombo. American Institutes for Research (AIR) was contracted by UNICEF Zambia in 2010 to design and implement a randomized controlled trial (RCT) for a 3-year impact evaluation of the program and to conduct the necessary data collection, analysis, and reporting.[1] This report presents findings from the 30-month follow-up study and builds on results from the 24-month impact report. Besides the additional 6 months of program implementation, the 30-month report differs from the 24-month report by investigating program impacts during the harvest season when both beneficiary and nonbeneficiary households should have more food and resources than in the lean season, the time of year when the 24-month impacts were measured. Therefore, we focus the report on outcomes directly related to spending and food security, including consumption, asset accumulation, debt, diet diversity, and living conditions. We also investigate all the outcomes in the 24-month report such as health, education, and productivity. This report presents findings after 30 months of program implementation, including impacts on expenditures, poverty, food security, living conditions, children, and productivity.

Study Design

We implemented an RCT to estimate program impacts after 30 months. This study includes 2,459 households in 88 Community Welfare Assistance Committees (CWACs) that have been randomly assigned to treatment or control conditions. As shown in the baseline report, randomization created equivalent groups. We lost 98 households (4 percent) to attrition 30 months into the study; however, we maintain equivalent groups and find no differential attrition between treatment and control groups. By maintaining the RCT design, we can attribute observed differences between treatment and control groups directly to the CGP.

The 30-month follow-up data collection occurred in Zambia's harvest season, when people have the largest amount of food from the recent harvest and hunger is at its lowest period of the year. The timing of this round of data collection occurred in June and July of 2013, roughly 30 months from the baseline study and 6 months after the 2-year impact report data collection. Zambia has three seasons: a rainy season from December through March, a cold dry season from April through August, and a hot dry season from September through November. Crops are planted in the rainy season and harvested throughout the rainy season and into May. Food is least scarce toward the beginning of the cold dry season when crops are harvested. At baseline (2010), we hypothesized about where we expected to find program effects based on the logic model and ex-ante simulations to predict impacts using the baseline data. We compare these estimates from baseline with observed impacts 30 months later, as well as with impacts at 24 months.

[1] Palm Associates was contracted by AIR to assist with the baseline data collection.

Operational Performance

Overall, we find that the Ministry has successfully implemented the cash transfer program. Beneficiaries report receiving the correct amount of money according to schedule, can access the money without any cost and with relative ease, and do not experience unethical solicitations. Nearly all recipients (97 percent) at the 30-month survey walk to access payments and less than 1 percent of recipients report that they have paid any money for travel. Almost all beneficiary households (98 percent) report that recipients usually pick up the payments instead of using family members or friends. A majority of households are informed about payments by CWAC members (80 percent), with the rest hearing about payments through family members (5 percent), pay point staff (5 percent), other community members (4 percent), and community leaders (3 percent). These results help explain the high success rate of completed payments during the first 30 months of the program's operations, with 91 percent of households in the study reporting a payment in the 3 months prior to the survey.

Consumption Expenditures, Food Security, and Poverty

The focus of the 30-month report is to understand how people respond to the program during the harvest season and whether impacts differ from those in the lean season by comparing them with the 24-month round. Expenditures and consumption are the primary outcomes that might change during the harvest season because everyone has more resources than in the lean season. We find that the CGP continues to impact consumption (ZK12 increase), but that these impacts are at the same level as in the 24-month period. Similarly, we find the program still reduces poverty, but at similar levels as in the 24-month period. Beneficiary households have more resources in the harvest season than in the lean season, but we do not observe them consuming more food. Instead it appears that their resources are going to other areas, such as reduced loans and more assets.

Credit

Overall, borrowing has declined. Because borrowing is typically driven by emergency consumption needs, it is consistent with the theory that CGP households are in a much more secure financial position, able to both pay down previous debt and curtail additional borrowing for consumption. We see a rather large and significant impact on the likelihood of not having a loan taken out prior to 6 months ago—a 7.3 percentage point reduction in the likelihood of having an outstanding loan. These results seem to be consistent with the idea that part of the transfer is being used to pay down old loans taken out by CGP households.

Asset Ownership

For most items, we find impacts to asset ownership at 30 months similar to those observed at 24 months. However, the program increases the mosquito net ownership rate in the 30-month wave by 9 percentage points relative to the control group, with 85 percent of beneficiaries owning a mosquito net.

The CGP at the 30-month period continues to have a positive impact on the ownership of a wide variety of livestock, both in the share of households with livestock and in the total number of animals. These

results are similar to the 24-month round except for chickens. There is a 22 percentage point impact to the number of households owning chickens, which is 10 percentage points higher than at 24 months. Similarly, program recipients own on average 2.3 more chickens than control households at the 30-month period and 1.2 chickens more at the 24-month period. Thus it appears that beneficiary households are purchasing more chickens and mosquito nets in the harvest season than they did in the lean season, explaining where some of the money went.

Housing Conditions

Beneficiaries used some of the transfers to purchase items to improve their living and housing conditions which can lead to improved health outcomes. For example, the CGP had a 15 percentage point increase on the number of households that own a latrine (67 percent of beneficiaries). Owning a latrine is important to improve household hygiene and sanitation, yet less than half of households had a latrine at baseline. Similarly, the CGP had a three percentage point increase on the number of households with cement floors. Cement floors can lead to improved health outcomes over dirt floors because they provide a cleaner environment that is less likely to transmit parasites and pathogens, especially to young children.[2]

In addition to improving their home, we find that beneficiaries improved their daily living conditions by purchasing torches or candles to light their home instead of using an open fire. Over half the households used open fire to light their home at baseline (57 percent). The CGP had a 26 percentage point impact on the number of households using a purchased method to light their home, such as candles or torches, with 86 percent of beneficiary households using a purchased method. According to a report about wood smoke by the World Health Organization in 2014, " 4.3 million people a year die prematurely from illness attributable to the household air pollution caused by the inefficient use of solid fuels."[3] Thus, the CGP's impact on reducing the use of an open fire in the home also contributes to reducing health problems caused by wood smoke.

Children

We investigate the impact of the program on an array of outcomes for children under age 5 as well as older children. We find no new impacts to children under 5 compared with the 24-month report. We find similar impacts to material needs except that we do not find impacts on having two sets of clothing, an indicator we found at the 24-month follow-up survey. There are three explanations for why this result went away at the 30-month period. First, both groups have more resources in June and July as a result of selling their harvest, enabling them to purchase more items, including clothing. Second, the cold weather during the harvest season may motivate parents in both groups to provide items such as warm clothing. Last, a ceiling effect occurred because the number of children with two sets of clothing in beneficiary households was already at 97 percent during the 24-month period, leaving little room for recipient households to improve more than nonrecipients on this indicator.

[2] http://www.csd-i.org/installing-concrete-floors/
[3] http://www.who.int/mediacentre/factsheets/fs292/en/

We find no impact on child labor at the 30-month follow-up for both primary school–age and secondary school–age children. However, we find that the program decreased child labor after 30 months of program implementation by 7 percentage points from the 24-month follow-up period for primary school–age children. This difference in impact between waves appears to be driven by boys, because we find the decrease in labor is significant only for boys and not for girls.

At the 30-month follow-up, we find impacts on several education outcomes for primary school–age children (7–14 years old), including currently being enrolled in school, number of days in attendance, and full attendance during the prior week; however, there are no impacts for secondary school–age children (15–17 years old). The program increases primary school enrollment by 7 percentage points, with 86 percent of all recipient children ages 7–14 attending school. The CGP also increases the number of primary school–age children fully attending school by 5 percentage points, with 88 percent of beneficiary children having full attendance the week prior to the 30-month survey. However, there are no impacts on education for secondary school–age children.

Productive Impacts

We continue to find impacts to productivity at the same levels estimated after 24 months of program implementation. In other words, the program continues to impact productivity after 30 months of implementation and the size of the impacts are similar and consistent with the impacts observed at the 24 month round report. The 30 month wave occurs during a different agricultural harvest season than the 24 month wave, so the program appears to impact productivity at similar levels over time.

In Conclusion

The CGP leads to consumption smoothing between the lean and harvest seasons, enabling beneficiary households to maintain the same level of food security throughout the year. The consumption smoothing effect also means that beneficiary households have more money to spend on nonfood items in the harvest season. We observe that beneficiaries have reduced debt, more chickens, more mosquito nets, and more latrines and cement floors. They also replace open fires with torches to light their home. One exciting new result is the impact on education for primary school–age children, with beneficiaries enrolling and attending more. Additionally, we find a reduction in child labor among beneficiary households for primary school–age boys compared with their labor in the lean season. We continue to see the control group improve over time for many indicators, perhaps due to the several bumper harvests that occurred during the period of the study and Zambia's growing economy. Thus, the cash transfer program generates large impacts over the control group even during a period in time when control households are improving.

I. Introduction

This report provides the 30-month follow-up results for the Child Grant cash transfer program impact evaluation. In 2010, the government of the Republic of Zambia through the Ministry of Community Development, Mother and Child Health (MCDMCH) began implementing the Child Grant cash transfer program (CGP) in three districts: Kaputa, Kalabo, and Shongombo. American Institutes for Research (AIR) was contracted by UNICEF Zambia in 2010 to design and implement a randomized controlled trial (RCT) for a 3-year impact evaluation of the program and to conduct the necessary data collection, analysis, and reporting.[4] This report presents findings from the 30-month follow-up study and builds on results from the 24-month impact report. Besides the additional 6 months of program implementation, the 30-month report differs from the 24-month report by investigating program impacts during the harvest season when both beneficiary and nonbeneficiary households should have more food and resources than in the lean season, the time of year when the 24-month impacts were measured. Therefore, we focus the report on outcomes directly related to spending and food security, including consumption, asset accumulation, debt, diet diversity, and living conditions. We also investigate all the outcomes in the 24-month report, such as health, education, and productivity. This report has 13 sections: Introduction; Conceptual Framework; Study Design; Attrition; Operational Performance; Expenditure, Consumption Smoothing, and Poverty; Credit; Asset Ownership; Housing Conditions; Children; Agricultural Production; Nonfarm Business Enterprise; and Conclusion.

Background

In 2010, Zambia's MCDMCH started the rollout of the CGP in three districts: Kalabo, Kaputa, and Shongombo. Zambia had been implementing cash transfer programs since 2004 in 12 other districts, trying different targeting models, including community-based targeting, proxy means testing, and categorical targeting by age (over 60 years old). The government decided to introduce a new model, the CGP, in three new districts that had never received any cash transfer program. This categorical model targets any household with a child under 5 years old. Recipient households receive 60 kwacha (ZMW) a month (equivalent to U.S. $12), an amount deemed sufficient by the MCDMCH to purchase one meal a day for everyone in the household for 1 month. The amount is the same regardless of household size. Payments are made every other month through a local pay point manager, and there are no conditions to receive the money.

Locations

The MCDMCH chose to start the CGP in three districts within Zambia that have the highest rates of extreme poverty and mortality among children under age 5, thus introducing an element of geographical targeting to the program. The three districts are Kaputa, located in Northern Province; Shongombo, located in Western Province; and Kalabo, also located in Western Province. All three districts are near the Zambian border with either the Democratic Republic of Congo (Kaputa) or Angola (Shongombo and Kalabo) and require a minimum of 2 days of travel by car to reach from the capital, Lusaka. Because Shongombo and Kalabo are cut off from Lusaka by a flood plain that turns into a river in

[4] Palm Associates was contracted by AIR to assist with the baseline data collection.

the rainy season, they can be reached only by boat during some months of the year. These districts represent some of the most remote locations in Zambia, making them a challenge for providing social services, and are some of the most underprivileged communities in Zambia.

Enrollment

Only households with children under age 3 are enrolled in the program to ensure that every recipient household receives the transfers for at least 2 years. This means that the baseline sample included only households with a child under 3. The Ministry implements a continuous enrollment system in which households are immediately enrolled after having a newborn baby. Thus, every household in the district with a child under 5 will receive benefits for 2 years after the program is introduced to that area.

Objectives

According to the MCDMCH, the goal of the CGP is to reduce extreme poverty and the intergenerational transfer of poverty. The objectives of the program relate to five primary areas: income, education, health, food security, and livelihoods. Therefore, the impact evaluation will primarily focus on assessing change in these areas. The objectives of the program according to the CGP operations manual follow (in no specific order):

- Supplement and not replace household income
- Increase the number of children enrolled in and attending primary school
- Reduce the rate of mortality and morbidity of children under 5
- Reduce stunting and wasting among children under 5
- Increase the number of households having a second meal per day
- Increase the number of households owning assets such as livestock

II. Conceptual Framework

The CGP provides an unconditional cash transfer to households with a child under age 5. CGP-eligible households are extremely poor, with 95 percent falling below the national extreme poverty line and having a median household per-capita daily consumption of ZMW 1.05, or approximately 20 U.S. cents. Among households at such low levels of consumption, the marginal propensity to consume will be almost 100 percent; that is, they will spend all of any additional income rather than save it. Thus, we expect the immediate impact of the program will be to raise spending levels, particularly basic spending needs for food, clothing, and shelter, some of which will influence children's health, nutrition, and material well-being. Once immediate basic needs are met, and possibly after a period of time, the sustained influx of new cash may then trigger further responses within the household economy, for example, by providing room for investment and other productive activity, the use of services, and the ability to free up older children from work to attend school.

Figure 2.1 brings together these ideas into a conceptual framework that shows how the CGP can affect household activity, the causal pathways involved, and the potential moderator and mediator factors. The diagram is read from left to right. We expect a direct effect of the cash transfer on household consumption (food security, material well-being), on the use of services, and possibly even on productive activity after some time. Sociological and economic theories of human behavior suggest that the impact of the cash may work through several mechanisms (mediators), including a woman's bargaining power within the household (because the woman receives the cash directly) and the degree to which the woman receiving the cash is forward looking. Similarly, the impact of the cash transfer may be weaker or stronger depending on local conditions in the community. These moderators include access to markets and other services, prices of goods and services, and shocks. Moderating effects are shown with dotted lines that intersect with the solid lines to indicate that they can influence the strength of the direct effect.[5]

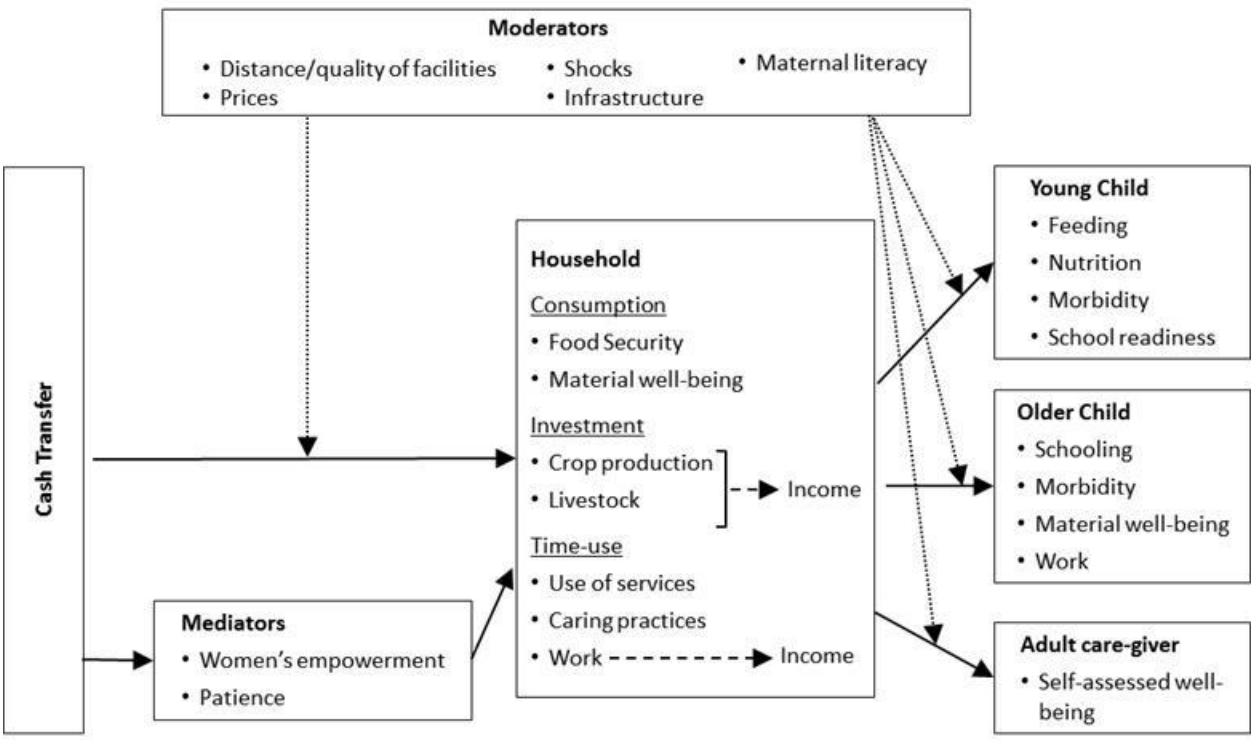
The next step in the causal chain is the effect on children, which we separate into effects on older and younger children because of the program's focus on very young children and because the key indicators of welfare are different for the two age groups. It is important to recognize that any potential impact of the program on children must work through the household by its effect on spending or time allocation decisions (including use of services). The link between the household and children can also be moderated by environmental factors, such as distance to schools or health facilities, as indicated in the diagram, and household-level characteristics themselves, such as the mother's literacy. Indeed, from a theoretical perspective, some factors cited as mediators may actually be moderators, such as women's bargaining power. We can test for moderation versus mediation through established statistical

[5] A mediator is a factor that can be influenced by the program and so lies directly within the causal chain. A moderator, in contrast, is not influenced by the program. Thus, service availability is a moderator, whereas women's bargaining power may be either a moderator or a mediator depending on whether it is itself changed by the program. Maternal literacy is a moderator and not a program outcome, unless the program inspires caregivers to learn to read and write.

techniques,[6] and this information will be important to help us understand the actual impact of the program on behavior.

Figure 2.1 identifies some of the key indicators along the causal chain that we analyze in the evaluation of the CGP. These are consistent with the log frame of the project and are all measured using established items in existing national sample surveys such as the Living Conditions Monitoring Survey (LCMS) and the Zambia Demographic and Health Survey (ZDHS). The only exception is the school readiness indicator, which is a relatively new index developed by UNICEF to be rolled out as part of its global Multiple Indicators Cluster Surveys (MICS) Program.

Figure 1. Conceptual Framework for Impact Evaluation of Child Grant Program

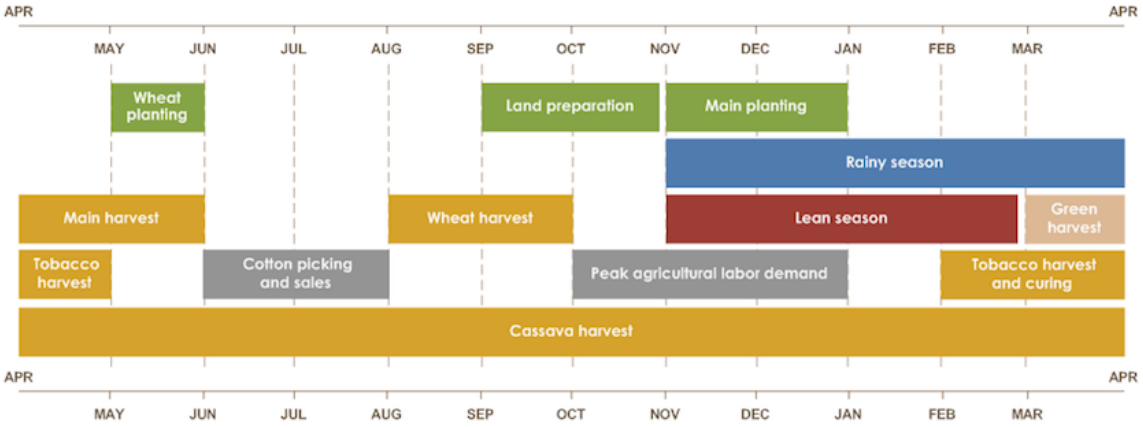


We expect the effects of the program on some outcomes to depend on the time of year because lifestyle in the rural Zambian villages varies by the farming season, including how people spend their time and how much money they have available. The average subsistence farmer in rural Zambia has the fewest resources and food security in the lean season, from November to March, and the greatest amount of food and resources during the harvest season in May and June. Figure 2.2 shows the seasonal agricultural calendar with planting, rain, lean season, and harvest season. The main harvest includes popular crops such as maize and sunflower. We expect a smaller difference in consumption and food security between beneficiaries and the control group during the harvest season than during the lean

[6] Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182.

season because the control group members have food from their harvest. Therefore, we may not see programmatic impacts to food-related outcomes during the harvest time. Similarly, we may observe smaller impacts to items such as clothing and shoes, because this is the time of year when farmers have some money from the harvest and purchase necessities. Instead, we are more likely to observe impacts for more expensive items, such as assets or livestock.

Figure 2.2: Seasonal Agricultural Calendar for a Typical Year in ZAMBIA



Source: http://www.fews.net/southern-africa/zambia [FEWS Net—Family Early Warning System Net]

III. Study Design

The CGP impact evaluation relies on a design in which communities were randomized to treatment and control to estimate the effects of the program on recipients. Communities designated by Community Welfare Assistance Committees (CWACs) were randomly assigned to either the treatment condition to start the program in December 2010 or to the control condition. This study reports on the effects of the program after 30 months during the harvest season.

Benefits of Randomization

A randomized controlled trial (RCT) is the most powerful research design for drawing conclusions about the impacts of an intervention on specific outcomes. An RCT draws from a pool of comparable subjects and then randomly assigns some to a treatment group that receives the intervention and others to a control group that does not receive the intervention and against which comparisons can be made. An RCT permits us to directly attribute any observed differences between the treatment and control groups to the intervention; otherwise, other unobserved factors, such as motivation, could have influenced members of a group to move into a treatment or a control group.[7] Randomization helps ensure that both observed and unobserved characteristics that may affect the outcomes are similar between the treatment and control conditions of the sample. In a randomized experiment, treatment and control groups are expected to be comparable (with possible chance variation between groups) so that the average differences in outcome between the two groups at the end of the study can be attributed to the intervention. Our analysis of comparison and treatment groups finds that randomization created equivalent groups at baseline for the CGP evaluation (see the baseline report for a complete description of the randomization process and results).

Timing and Process of Data Collection

To ensure high-quality and valid data, we paid special attention to the process and timing of data collection, making sure that it was culturally appropriate, sensitive to Zambia's economic cycle, and consistently implemented. AIR contracted with Palm Associates, a Zambian research firm with years of experience conducting household surveys throughout Zambia, to help implement the CGP survey and enter the data. A team of Zambian enumerators experienced in household and community surveys and fluent in the local language where they worked were trained on the CGP instrument and then tested in the field before moving into their assigned communities for data collection.

One enumerator collected data in each household, interviewing the identified potential female recipient and documenting her answers. This oral interview process was necessary because many of the recipients are illiterate. In addition to interviewing the female head of household, the enumerator collected anthropometric measures (height and weight) for every child age 7 or under, using high-quality height boards and scales endorsed by UNICEF. Enumerators were trained in proper anthropometric measuring techniques and then supervised in the field by specialists from Zambia's National Food and

[7] Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Hopewell, NJ: Houghton Mifflin.

Nutrition Commission. In addition to the household survey, two senior enumerators administered a community questionnaire in every CWAC to a group of community leaders, including CWAC committee members, teachers, village headmen, and local business owners.

The 30-month follow-up data collection occurred in Zambia's harvest season, when people have the most amount of food from the recent harvest and hunger is at its lowest during the year. The timing of this round of data collection occurred in June and July of 2013, roughly 30 months from the baseline study and 6 months after the 2-year impact report data collection. Zambia has three seasons: a rainy season from December through March, a cold dry season from April through August, and a hot dry season from September through November. Crops are planted in the rainy season and harvested throughout the rainy season and into May. Food is least scarce toward the beginning of the cold dry season when crops are harvested.

Data Entry

Palm Associates entered the data as they came in from the field. Data were verified using double entry on separate computers, flagging inconsistent responses between the two entries, and referring to the original questionnaire to see the actual response.

Analysis Approach

This study is a longitudinal, randomized, controlled evaluation with repeated measures at the individual and household levels. We estimate program impacts on individuals and households using a differences-in-differences (DD) statistical model that compares change in outcomes between baseline and follow-up and between treatment and control groups (see Annex 1 for details on this method). The DD estimator is the most commonly used estimation technique for impacts of cash transfer models and has been used, for example, in Mexico's Progresa program[8] and Kenya's Cash Transfer for Orphans and Vulnerable Children.[9] We use cluster-robust standard errors to account for the lack of independence across observations due to clustering of households within CWACs.[10] We also use inverse probability weights to account for the 4 percent attrition in the follow-up sample.[11] The CGP provides the same transfer size to a household, regardless of the household size. Therefore, we investigate differential impacts by household size for each outcome. We present impacts by household size only when they are different.

[8] http://wbro.oxfordjournals.org/cgi/reprint/20/1/29

[9] Kenya CT-OVC Evaluation Team. (2012). The impact of the Kenya CT-OVC Program on human capital. *Journal of Development Effectiveness*, *4*(1), 38–49.

[10] http://www2.sas.com/proceedings/sugi23/Posters/p205.pdf

[11] Woolridge, J. W. (2010). *Econometric analysis of cross section and panel data*. Cambridge, MA: MIT Press.

IV. Attrition

Attrition within a sample occurs when households from the baseline sample are missing in the follow-up sample. Mobility, the dissolution of households, death, and divorce can cause attrition and make it difficult to locate a household for a second data collection. Attrition causes problems in conducting an evaluation because it not only decreases the sample size (leading to less precise estimates of program impact) but also introduces selection bias to the sample, which will lead to incorrect program impact estimates or change the characteristics of the sample and affect its generalizability.[12] There are two types of attrition: differential and overall. Differential attrition occurs when the treatment and control samples differ in the types of individuals who leave the sample. Differential attrition can create biased samples by eliminating the balance between the treatment and control groups achieved through randomization at baseline. Overall attrition is the total share of observations missing at follow-up from the original sample. Overall attrition can change the characteristics of the remaining sample and affect the ability of the study's findings to be generalized to populations outside the study. Ideally, both types should be small.

We investigate attrition at the 30-month follow-up by testing for similarities at baseline between (1) treatment and control groups for all nonmissing households (differential attrition) and (2) all households at baseline and the remaining households at the 30-month follow-up (overall attrition). Testing these groups on baseline characteristics can assess whether the benefits of randomization are preserved at follow-up. Fortunately, we do not find any significant differential attrition at the 30-month follow-up, meaning that we preserve the benefits of randomization. Additionally, less than 4 percent of the overall sample was lost to attrition during this survey, a vast improvement over the 24-month follow-up where 9 percent of the original sample was not located.

Differential Attrition

We find no difference in baseline characteristics between the treatment and control households that remain in the study at the 30-month follow-up, meaning that there is no differential attrition and the benefits of randomization are preserved. Table 4.1 shows the household response rates at the 30-month follow-up by treatment status for each district. The response rates are balanced between the treatment and control groups. We test all the household, young child, and older child outcome measures and control variables for statistical differences at baseline between the treatment and control groups that remain in the 30-month follow-up analysis. None of the 43 indicators is statistically different, demonstrating that on average, people missing from the 30-month follow-up sample looked the same at baseline regardless of whether they were from the treatment or control group. The similarity of the characteristics of people missing in the follow-up sample between treatment statuses allays the concern that attrition introduced selection bias. Thus, the study maintains strong internal validity created through randomization, enabling estimated impacts to be attributed to the cash transfer program rather than to differences in the groups resulting from attrition. See Annex 2 for the results of the tests mean differences on the 43 indicators.

[12] What Works Clearinghouse (http://ies.ed.gov/ncee/wwc/documentsum.aspx?sid=19)

Table 4.1: Household Response Rate by Study Arm at 30-Month Follow-Up for CGP (n = 2460)

District	Treatment	Control	n
Kaputa	94.3	94.8	837
Kalabo	95.9	96.4	784
Shangombo	97.4	97.9	838
Overall	95.9	96.34	2459

Overall Attrition

Over 96 percent of the households from baseline remain in the 30-month follow-up sample, which is 5 percentage points higher than in the 24-month sample. Table 4.2 indicates that nearly half the missing households come from Kaputa. As was the case in the 24-month wave of data collection, most of the attrition in Kaputa occurred because the Cheshi lake is drying up, forcing households that relied on the lake for fishing and farming at baseline to move their homes as they follow the edge of the lake inward. Entire villages disbanded, with households spreading out to new areas and building new homes in remote swampy areas that are difficult to locate or reach by vehicle on land. Some households that relocated during the 24-month follow-up survey returned for the harvest season, so attrition was lower at the 30-month survey. This problem in Kaputa affected treatment and control households equally, demonstrated by the lack of differential attrition by treatment status.

Table 4.2: Overall Attrition for CGP 30-Month Follow-Up: Household Response Rate by District

District	Response rate	Households at Baseline	Percent of Total Missing Households
Kaputa	95	837	48
Kalabo	96	784	31
Shangombo	98	839	21
Overall	96	2460	100

There are no mean differences in 43 baseline characteristics between the remaining sample at the 30-month follow-up and the sample at baseline. These results suggest no overall attrition. See Annex 2 for all results comparing the baseline sample with those who remain in the 30-month follow-up.

V. Operational Performance

During the 30-month survey, we included a small module on payment methods to ensure that the program implementation continued to run smoothly. We find that recipients are still receiving timely payments with easy access to pay points.

Monitoring payments provides insights into program efficiency. Ineffective payment distribution may result in underutilization of funds, missed payments, and dissatisfaction in beneficiary households. The potential problems in distribution could also add upfront costs to the Ministry, making program expansion within Zambia challenging. Therefore, the 30-month follow-up survey reports on private costs for the recipients, such as access to payment and timeliness of payments.

Nearly all recipients (97 percent) at the 30-month survey walk to access payments, and less than 1 percent of recipients report that they paid any money for travel. Almost all beneficiary households (98 percent) report that recipients usually pick up the payments instead of using family members or friends. A majority of households are informed about payments by CWAC members (80 percent), with the rest hearing about payments through family members (5 percent), pay point staff (5 percent), other community members (4 percent), and community leaders (3 percent). These results help explain the high success rate of completed payments during the first 30 months of the program's operations, with 91 percent of households in the study reporting a payment in the 3 months prior to the survey. Therefore, it appears that pay points are appropriately located, easily accessible, quick, and reliable.

VI. Expenditure, Consumption Smoothing, and Poverty

The focus of the 30-month report is on understanding how people respond to the program during the harvest season and whether impacts differ from those in the lean season by comparing them with the 24-month round. Expenditures and consumption are the primary outcomes that might change during the harvest season because everyone has more resources than in the lean season. In this chapter, we present impact estimates on total and food consumption per capita expenditure of the CGP. We find that the CGP continues to have an impact on consumption, but that these impacts are at the same level as in the 24-month period. For food consumption, there is a smaller impact at 30 months than at 24 months, which is explained by the control group having more food during the harvest season, while beneficiaries still consume the same amount as previously. Similarly, we find that the program still reduces poverty, but at levels similar to those in the 24-month period.

Tables in this report follow a format that provides information about impacts at 30 months and 24 months, differences in impacts between these periods, and baseline statistics. Our explanation of the first table, Table 6.1, can be applied to all similar tables that follow. Table 6.1 reports results for total consumption as well as eight categories of consumption. Column (1) in this table shows the impact of the CGP between baseline and 30 months. Column (2) shows the impact at 24 months, which was the focus of the previous evaluation report; therefore, the impacts reported in this column will be similar to those presented in the previous report.[13] Finally, column (3) tests the difference between the 24- and 30-month impacts. Column (4) show the baseline mean value of the indicator mentioned at the beginning of each row, and columns (5) and (6) show the mean values for the treatment and control groups at 30 months. These are important in assessing the levels of consumption for the two groups, because the impact estimates in columns (1) through (3) only indicate differences in levels. Our analysis of impacts will first focus on statistical differences between 24- and 30-month impacts (column 3). In other words, we want to see whether there have been any changes in the pattern of impacts that were reported at 24 months. If there are differences, we will then explore the direction of the change in impact using columns 1 and 2. We restrict our attention to statistical significance at 5 percent confidence because of the large sample size in this study.

Column (3) of Table 6.1 shows that there is no significant deviation from impacts reported at 24 months. Although not statistically significantly different from 24 months, the impact at 30 months is ZK3.8 lower than it was at 24 months. This is consistent with the conceptual framework where we noted that the 30-month survey coincided with the agricultural harvest and so it was likely that control households would catch up to treatment households during this period, although the impact on food consumption among treatment households is still ZK7.5 higher than among control households (column 1).

[13] The point estimates of impacts will not be identical to those in the 24-month report because of adjustments for attrition and because the previous report used households who reported information on both survey rounds only, whereas here we use all households if they appear in any survey round. There are no qualitative differences between the 24-month impacts reported here and those reported in the 24-month evaluation report.

Table 6.2 repeats the analysis, using consumption measured in shares rather than absolute levels. The benefit of this approach is that it illustrates the relative importance of each item in the overall consumption basket of the household. Here again, focusing on column 3, we see a relative decline in the importance of food in the consumption basket of treatment households, even though their absolute level of food consumption is higher—this is of course because their overall total level of consumption has increased. The well-known Engel's Law states that as the well-being of a household increases, its share of food consumption decreases; this is exactly what we appear to observe among treatment households.

Table 6.1: CGP Impacts on Per-Capita Expenditures (ZMW 2010 = 100)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Total	**12.27**	**14.68**	-2.41	39.84	67.55	53.52
	(3.16)	(4.81)	(-0.71)			
Food	**7.47**	**11.26**	-3.79	29.51	50.45	41.57
	(2.48)	(4.63)	(-1.32)			
Clothing	**0.80**	**0.88**	-0.08	1.27	2.08	1.33
	(4.48)	(5.84)	(-0.61)			
Education	0.19	0.09	0.10	0.45	1.13	0.87
	(1.10)	(0.35)	(0.59)			
Health	**1.19**	**1.11**	0.09	2.22	3.79	2.52
	(3.63)	(4.67)	(0.32)			
Domestic	0.99	0.47	0.52	5.12	6.47	5.27
	(1.43)	(0.79)	(0.94)			
Transport/Communication	**1.47**	**0.89**	0.58	0.74	2.58	1.15
	(2.97)	(2.61)	(1.10)			
Other	0.05	0.01	0.04	0.11	0.49	0.40
	(0.41)	(0.06)	(0.39)			
Alcohol, Tobacco	0.14	0.01	0.13	0.40	0.56	0.41
	(0.93)	(0.08)	(1.10)			
N		7,064		2,459	1,178	1,185

NOTE: Estimations use difference-in-difference modeling among panel households. Robust t-statistics clustered at the CWAC level are in parentheses. Bold indicates that they are significant at $p < .05$. All estimations control for household size, recipient age, education and marital status, districts, household demographic composition, and a vector of cluster-level prices. The N in column (2) represents the number of observations used in the regression model that includes all three waves of data – baseline, 24 months and 30 months.

Table 6.2: CGP Impacts on Expenditure Shares

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Food	-0.013	0.009	**-0.022**	0.719	0.748	0.761
	(-0.870)	(0.670)	(-2.106)			
Clothing	**0.008**	**0.008**	0.000	0.034	0.033	0.028
	(3.078)	(3.165)	(0.081)			
Education	0.003	0.000	0.002	0.015	0.019	0.016
	(1.223)	(0.149)	(1.173)			
Health	**0.009**	0.006	0.003	0.056	0.059	0.051
	(2.242)	(1.621)	(0.874)			
Domestic	-0.019	**-0.028**	0.009	0.155	0.101	0.118
	(-1.368)	(-2.145)	(1.133)			
Transport/Communication	**0.012**	0.006	0.006	0.011	0.024	0.013
	(3.230)	(1.626)	(1.431)			
Other	-0.000	0.001	-0.001	0.002	0.007	0.007
	(-0.095)	(1.554)	(-1.042)			
Alcohol, Tobacco	-0.000	-0.002	0.002	0.008	0.008	0.007
	(-0.113)	(-1.040)	(1.338)			
N		7,062		2,457	1,178	1,185

NOTE: Same notes as in Table 6.1.

Figures 6.1 and 6.2 provide another approach to understanding the impact of the CGP on overall consumption as well as consumption over the agricultural cycle. These figures show the level of total and food consumption across the three survey rounds by study arm. Focusing first at overall consumption, we note three important features of the data. First, the relative increase in consumption at 24 months among treatment is very large compared with those of control—these are the large impacts reported in the 24-month report. Second, during the lean season, consumption among T does not increase any further but consumption in control does increase. Thus, treatment households are able to smooth their consumption over the agricultural season as a result of the program. Third, the overall level of consumption in treatment is higher at 24 months (planting season) than the level in control at 30 months (harvest season). In other words, the program manages to get households to their ideal level of consumption, and this level is higher than the level of consumption among control households during their peak consumption period.

Figure 6.1: Average Total and Food Per-Capita Expenditures—Treatment

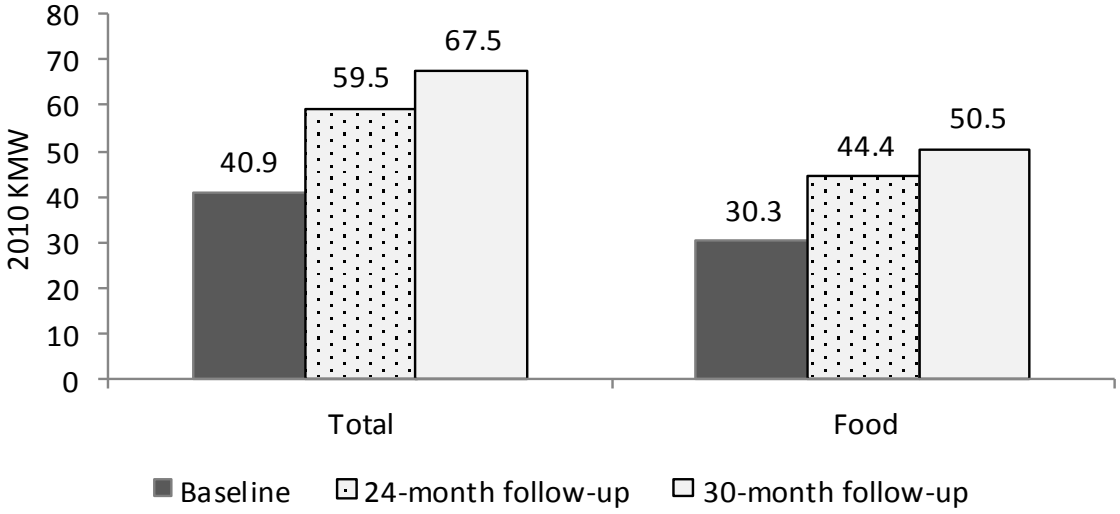
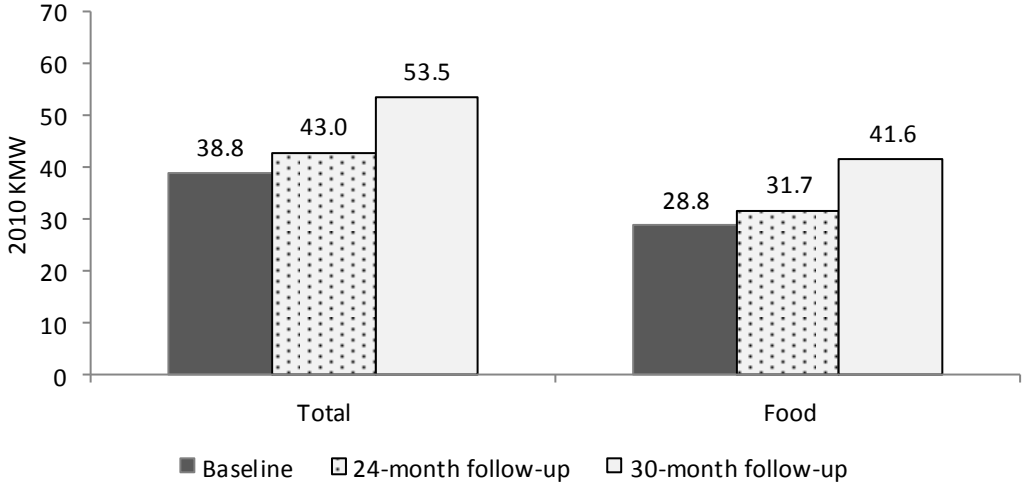


Figure 6.2: Average Total and Food Per-Capita Expenditures—Control



These same features of the data also hold for food consumption. We see that food consumption for treatment households essentially stabilizes over the agricultural season but continues to increase for control households, while the overall level of food consumption remains higher among treatment households. Consequently, we conclude that the CGP has had an important impact on both overall levels of total and food consumption as well as on enabling households to smooth consumption over the season.

We have undertaken several extensions to the main results presented above. First, we have analyzed impacts separately for small (fewer than 5 people) and large households to see whether there is a consistent pattern of stronger results among smaller households, for whom the per capita value of the transfer is larger. We do not find evidence of such a pattern in the results (see Annex 3).

Second, we have looked at impacts in the pattern of food consumption itself. These results are presented in Table A3.5 in Annex 3 and are summarized briefly here. We find a significant decline in the impact of the CGP between 24 months and 30 months for cereal, sweets, and fats. For cereals, the absolute level of consumption continues to be higher among treatment households, whereas for sweets and fats the absolute levels converge. Thus it appears that during the harvest season when households are not as consumption constrained, they expand consumption of sweets and fats. Among treatment households, we already observed large increases in sweets and fats at 24 months relative to the control group. Once again, treatment households appear to have reached their ideal level of consumption of these items already, and hence they do not display variability over the season, whereas control households increase their consumption of these items significantly during the harvest season. This provides additional insight into how the CGP affects the consumption behavior of households.

We complete this section by reporting the poverty impacts of the program at 30 months. We follow the procedure described in the 24-month evaluation report of using per capita household consumption as our welfare measure and applying the national poverty lines to this measure. Because we implement the exact same consumption module as the LCMS, we are able to accurately measure monetary welfare in the same manner as done by the Central Statistics Office.

Table 6.3 is structured in the same way as the previous tables and allows us to capture changes in poverty impacts between 24- and 30-month survey rounds. Column 3 shows that in fact there is no change in the impact of the CGP across the two rounds. As before, impacts of the CGP are largest for the poverty gap and squared poverty gap because these indicators account for the distribution of welfare among the very poorest, and most CGP recipients are quite far from the poverty line. The result in column 3 of no further impacts on poverty at 30 months is consistent with our consumption-based measure of well-being. We noted above that CGP recipients are able to smooth consumption over the agricultural season and thus displayed no further increases in consumption at 30 months, while there was an improvement in consumption among control households. If anything, we should observe a slight decline in impacts for poverty and squared poverty gap, but as also noted above, despite the increase in consumption among control households, their overall levels continue to be much lower than among treatment households.

Taken together, these results raise an important question. If there is no increase in consumption among treatment households at 30 months, yet they continue to receive the transfer, where is the transfer going? The next chapters of this report on credit and asset ownership will seek to answer this question.

Table 6.3: Impact of CGP on Poverty Indicators

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treatment Mean (5)	30M Control Mean (6)
<u>Severe Poverty Line</u>						
Headcount	-0.029	**-0.064**	0.035	0.949	0.878	0.928
	(-1.309)	(-3.406)	(1.449)			
Poverty Gap	**-0.090**	**-0.111**	0.021	0.608	0.429	0.539
	(-3.713)	(-4.550)	(0.920)			
Sq. Poverty Gap	**-0.084**	**-0.108**	0.023	0.430	0.247	0.351
	(-3.603)	(-4.146)	(1.128)			
<u>Moderate Poverty Line</u>						
Headcount	-0.003	**-0.020**	0.016	0.986	0.964	0.979
	(-0.404)	(-2.202)	(1.612)			
Poverty Gap	**-0.072**	**-0.093**	0.021	0.724	0.582	0.671
	(-3.327)	(-4.754)	(1.018)			
Sq. Poverty Gap	**-0.081**	**-0.103**	0.022	0.570	0.402	0.502
	(-3.631)	(-4.485)	(1.064)			
N		7,062		2,457	1,178	1,185

NOTE: Same notes as in Table 6.1.

VII. Credit

Table 7.1 shows impact results for credit and loans among study households. Note that credit information was collected only at the 30-month wave; therefore, the tables look different from those in the previous chapter. The results in column 1 present the differential impacts of the program between treatment and control households. Column 2 provides the average for the control group for each outcome considered, which serves as a reference point for the estimated impacts. The remaining columns show impacts for small and large households, respectively, as well as control group means for those subsamples. The relevant sample size is shown in the square bracket below the t-statistic.

We begin by looking at loans taken out prior to December 2012, that is, not within the last 6 months (recall that the 30-month survey was conducted in June and July 2013). We see a rather large and significant impact on the likelihood of not having a loan from this prior period—a 7.5 percentage point reduction in the likelihood of having an outstanding loan. Note that the point estimate for large households is 9.5 percentage points while the impact for small households is 5.5 percentage points. There is no impact on the amount outstanding, however, among those who still have a loan from before 6 months, although obtaining accurate amounts is notoriously hard in surveys that are not dedicated toward credit and loans, and so our estimates are no doubt swamped by measurement error. Nevertheless, these results seem to be consistent with the idea that part of the transfer is being used to pay down old loans taken out by CGP households.

Table 7.1: Impact of CGP on Credit Outcomes

	All HH		Small HH		Large HH	
	Program Impact (1)	Control Stats[1] (2)	Program Impact (3)	Control Stats (4)	Program Impact (5)	Control Stats (6)
Owe Money from before December 2012	**-0.073**	0.120	**-0.055**	0.100	**-0.095**	0.140
	(-4.564)		(-3.720)		(-3.788)	
	[2,402]	[1,210]	[1,210]	[617]	[1,192]	[593]
Amount Owed[2]	-25.966	92.923	-11.624	82.410	-45.585	101.362
	(-1.666)		(-0.417)		(-1.943)	
	[198]	[137]	[88]	[61]	[110]	[76]
Borrow money last 6 months	-0.016	0.202	-0.049	0.199	0.026	0.204
	(-0.595)		(-1.617)		(0.829)	
	[2,401]	[1,210]	[1,210]	[617]	[1,191]	[593]
Loan used for Consumption	-0.016	0.844	-0.027	0.895	-0.001	0.785
	(-0.400)		(-0.922)		(-0.023)	
	[471]	[244]	[202]	[114]	[251]	[121]
Amount borrowed last 6 months[2]	1.413	62.113	1.775	60.000	-5.764	64.299
	(0.177)		(0.149)		(-0.576)	
	[449]	[238]	[213]	[121]	[236]	[117]

NOTE: Estimations use single difference using data from 30-month wave. Robust t-statistics clustered at the CWAC level are in parentheses. Bold indicates that they are significant at $p < .05$. The N used in the analysis for each indicator is in the square brackets [ ]. All estimations control for household size, recipient age, education and marital status, districts, household demographic composition, and a vector of cluster-level prices.

[1.] Control stats in the table refer to the average and standard deviations (in squared brackets) for the control group for each outcome considered. [2.] The highest 5% values for these outcomes were discarded owing to unlikely large values for this population.

VIII. Asset Ownership

We investigate the ownership of assets to determine whether the CGP enables beneficiaries to purchase more expensive items, especially during the harvest season when there is less need to purchase food, freeing up resources for other items. We assess three categories of assets: household assets, agricultural tools, and livestock.

Household Assets

The CGP has a positive impact on the ownership of a wide variety of household assets at both the 24-month and the 30-month waves. The results presented in Table 8.1 indicate that households receiving the transfer are more likely to own a bed, a mattress, a sofa, a radio, a charcoal iron, and a solar panel in both waves. In addition, the program increases the mosquito net ownership rate in the 30-month wave by 9 percentage points relative to the control group, with 85 percent of beneficiaries owning a mosquito net. Mosquito nets are more necessary during the rainy and harvest season when malaria levels peak in the village; thus, it makes sense for mosquito net ownership to go up during the harvest season than during the lean season. For some of these assets, program impacts are twice as large as baseline values. For example, the proportion of beneficiary households that own a bed and a mattress at 30 months is about 46 percent, whereas it was only 20 percent at baseline.

Table 8.1: Impact of CGP on Asset Ownership (Share)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Bed	**0.170**	**0.212**	-0.042	0.200	0.463	0.241
	(4.858)	(6.274)	(-1.208)			
Mattress	**0.180**	**0.236**	-0.056	0.150	0.460	0.241
	(5.789)	(7.229)	(-1.455)			
Mosquito Net	**0.090**	0.034	**0.056**	0.800	0.845	0.715
	(2.670)	(0.976)	(2.391)			
Table	0.030	0.046	-0.016	0.163	0.169	0.108
	(0.936)	(1.441)	(-0.598)			
Sofa	**0.040**	**0.027**	0.013	0.033	0.087	0.034
	(3.163)	(2.204)	(0.864)			
Radio	**0.072**	**0.087**	-0.014	0.107	0.210	0.127
	(3.318)	(3.201)	(-0.465)			
TV	0.009	**0.019**	-0.010	0.018	0.053	0.020
	(1.592)	(2.671)	(-1.384)			
DVD	0.009	0.008	0.002	0.017	0.044	0.019
	(1.930)	(1.559)	(0.229)			
Cell	0.026	-0.007	0.034	0.084	0.166	0.120
	(1.407)	(-0.327)	(1.778)			
Watch	0.005	0.012	-0.007	0.033	0.022	0.016
	(0.652)	(1.368)	(-0.603)			
Iron	**0.030**	**0.028**	0.002	0.032	0.071	0.035
	(2.281)	(2.176)	(0.130)			
Solar Panel	**0.063**	**0.075**	-0.013	0.024	0.118	0.051
	(3.827)	(4.774)	(-0.583)			
Assets Index	**0.472**	**0.415**	0.057	-0.193	0.448	-0.102
	(6.732)	(6.606)	(0.992)			
N		7,053		2,456	1,178	1,185

NOTE: Estimations use difference-in-difference modeling among panel households. Robust t-statistics clustered at the CWAC level are in parentheses. Bold indicates that they are significant at $p < .05$. All estimations control for household size, recipient age, education and marital status, districts, household demographic composition, and a vector of cluster-level prices.

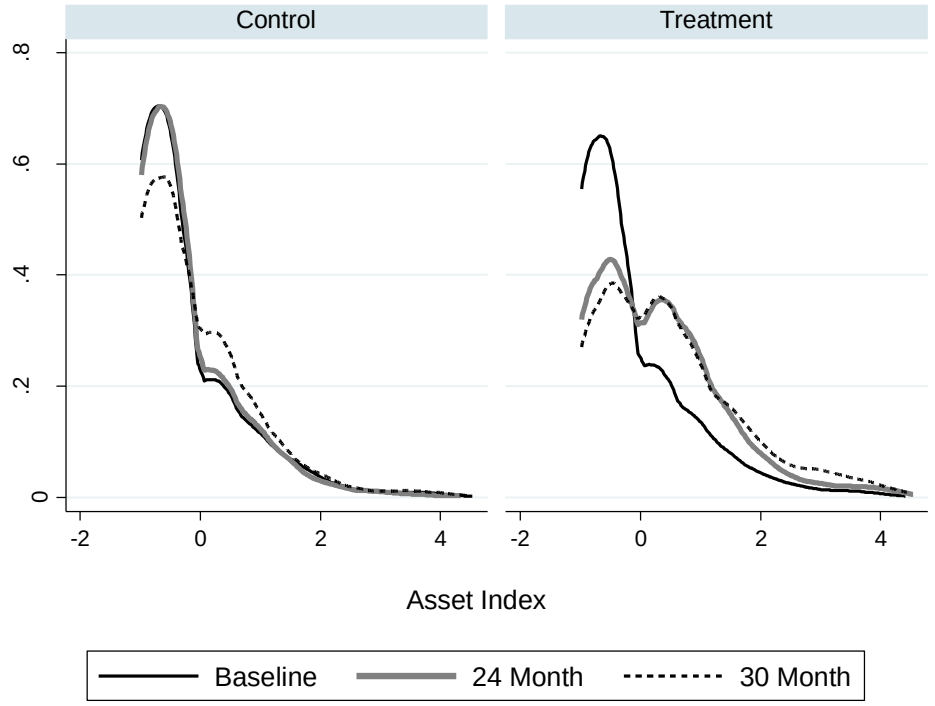
The results from Table 8.1 also show that with the exception of mosquito nets, there does not seem to be significant differences in asset ownership between the 24- and 30-month follow-up waves. This means that beneficiary households acquiring these assets did so before the 24-month wave with no additional purchases afterward. In general, this behavior is consistent with most of these assets being durable goods for general use within the household. A closer look at these results by household size (Annex Tables A4.1 and A4.2) shows that the increases in the 30-month wave on some assets such as beds, mattresses, and radios are slightly higher for large households, which is consistent with small households being at a level of asset ownership on these durable goods where they choose to spend their cash in other ways, while large households still desire to purchase more of these durable goods.

Another interesting feature of Table 8.1 is that program impacts are positive for all considered assets, even though some of them are not statistically different from zero. If there is heterogeneity in asset

preferences, beneficiary households will invest in a variety of assets. As a result, the estimated effects for some specific assets would not be large enough to be significantly different from the control group. One way to investigate asset ownership after accounting for ownership diversification is to aggregate asset indicators through a weighted index, where the weight for each individual asset is estimated using the statistical procedure of principal components.[14]

Figure 8.1 compares the distribution of the asset index between treatment and control groups for each one of the three waves. Note that the resulting index is positively associated with asset ownership, which means that the higher the number of assets owned, the higher the asset index is. For the control group, the distribution of the index shows that although there is very little difference in the distribution between baseline and the 24-month wave, they increased their ownership rates by the 30-month wave, as indicated by the movement of the 30-month distribution to the right of the previous waves' distributions. This is consistent with all households having more resources during the harvest season.

Figure 8.1 Distribution of Asset Index (All Households)



In turn, treatment households exhibit an increase in asset ownership before the 24-month wave.

[14] Principal components is a data reduction technique that allows creating a linear index of all the variables considered that captures the largest amount of information that is common to all of the variables. See Lindeman, R. H., Merenda, P. F., & Gold, R. Z. (1980). *Introduction to bivariate and multivariate analysis*. Glenview, IL: Scott, Foresman.

Moreover, the 30-month distribution is just slightly to the right of the 24-month distribution. This finding provides additional evidence that although beneficiary households also have more resources during the harvest season, they have reached a level of ownership for these durable assets where they choose to spend their money in other ways instead of purchasing more of these items.

Agricultural Tools

We also see a positive impact on ownership of agricultural tools, but with two distinct patterns. For agricultural implements with baseline values of less than 10 percent, such as picks, hammers, shovels, and ploughs, we see a positive impact of between 2 and 6 percentage points on the *share* of households owning these tools (Table 8.2). Note that the impact on picks, hammers, shovels, and ploughs is concentrated among large households (Annex Tables A4.3 and Table A4.4). Note that picks are the only tool more likely to be owned by beneficiary households by the 30-month wave. For implements widely available at baseline, such as axes and hoes (up to approximately 90 percent of households at baseline), we see significant program impacts on the number of assets held at both waves, with no significant differences in number between the two follow-up waves (Annex Table A4.5).

The similar program impacts on agricultural tool ownership between the two follow-up waves are also a consequence of the durable-goods condition of the agricultural tools considered and the short period of time between both waves.

Table 8.2: Impact of CGP on Agricultural Implements (Share)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Index	**0.276**	**0.239**	0.037	-0.186	0.300	-0.038
	(3.778)	(3.196)	(0.605)			
Axe	0.004	0.001	0.003	0.779	0.840	0.809
	(0.090)	(0.031)	(0.069)			
Pick	**0.043**	0.008	**0.034**	0.025	0.071	0.032
	(2.548)	(0.584)	(2.117)			
Hoe	0.002	0.007	-0.005	0.912	0.958	0.960
	(0.122)	(0.480)	(-0.259)			
Hammer	**0.061**	**0.041**	0.020	0.048	0.113	0.048
	(3.706)	(2.733)	(1.082)			
Shovel	0.020	0.022	-0.002	0.052	0.124	0.061
	(1.384)	(1.530)	(-0.120)			
Plough	0.013	**0.026**	-0.013	0.064	0.076	0.050
	(1.513)	(2.671)	(-1.346)			
N		7,062		2,459	1,178	1,183

NOTE: Same notes as in Table 8.1.

Livestock Ownership

The CGP at the 30-month survey has a positive impact on the ownership of a wide variety of livestock, both in the share of households with livestock and in the total number of animals. In terms of shares, beneficiary households at the 30-month wave are 5 and 17 percentage points more likely to own milk cows and cattle, respectively, relative to control households. The share of program participants with

chicken and ducks also increases by 22 and 2 percentage points, respectively, relative to the control group.

Table 8.3: Impact of CGP on Livestock Ownership (Share)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Livestock Index	**0.509**	**0.417**	0.092	-0.124	0.377	-0.157
	(7.576)	(5.632)	(1.454)			
Milk Cows	**0.046**	0.014	0.032	0.053	0.031	0.003
	(3.896)	(1.899)	(1.878)			
Cattle	**0.171**	**0.167**	0.004	0.139	0.282	0.144
	(4.731)	(4.387)	(0.111)			
Goats	0.013	0.018	-0.005	0.023	0.059	0.015
	(1.482)	(1.861)	(-0.464)			
Chicken	**0.218**	**0.122**	**0.096**	0.426	0.595	0.393
	(4.717)	(2.395)	(2.430)			
Ducks	**0.026**	**0.030**	-0.003	0.031	0.037	0.022
	(2.598)	(2.848)	(-0.238)			
N		7,060		2,455	1,178	1,185

NOTE: Same notes as in Table 8.1.

The program also has an effect on the number of animals. Program beneficiaries own 0.4 additional cows, 0.16 goats, 2.3 chickens, and 0.2 ducks relative to control households. Both small and large beneficiary households have increased livestock ownership, but the impacts on milk cows and cattle are particularly strong for large households (Annex Tables A4.6 and A4.7).

With the exception of chickens, there are no important differences for beneficiaries between the 24- and 30-month waves in terms of the share or number of livestock. This finding is consistent with the ownership patterns discussed above for other types of assets.

Table 8.4: Impact of CGP on Livestock Ownership (Number)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Livestock Index	**0.509**	**0.417**	0.092	-0.124	0.377	-0.157
	(7.576)	(5.632)	(1.454)			
Cows	-0.074	-0.083	0.008	0.199	0.081	0.010
	(-0.673)	(-0.808)	(0.227)			
Cattle	**0.384**	**0.380**	0.004	0.353	0.800	0.374
	(2.105)	(2.334)	(0.036)			
Goats	0.070	**0.166**	-0.095	0.056	0.185	0.066
	(1.469)	(3.861)	(-1.970)			
Chicken	**2.311**	**1.144**	**1.167**	1.910	4.292	1.952
	(5.764)	(2.867)	(3.340)			
Ducks	**0.201**	**0.244**	-0.043	0.132	0.195	0.090

	(2.568)	(2.980)	(-0.826)			
N		7,060		2,455	1,178	1,185

NOTE: Same notes as in Table 8.1.

IX. Housing Conditions

Beneficiaries use the transfers to purchase items to improve their living and housing conditions, which can lead to improved health outcomes. For example, the CGP had a 15 percentage point increase in the number of households that own a latrine (67 percent of beneficiaries). Owning a latrine is important for improving household hygiene and sanitation, yet less than half of households had a latrine at baseline. The CGP helps with costs to build a latrine such as hired labor to dig the hole and construct the latrine, cement for the platform, and bricks for the walls. Similarly, the CGP had a 3 percentage point increase in the number of households with cement floors. Cement floors can lead to improved health outcomes over dirt floors because they provide a cleaner environment that is less likely to transmit parasites and pathogens, especially to young children.[15] However, concrete is an expensive item that few people in a village can afford, demonstrated by the fact that only 3 percent of households had cement floors at baseline. Table 9.1 lists the impacts of the CGP on housing conditions at 30 months into program implementation.

In addition to improving their home, we also find that beneficiaries improved their daily living conditions by purchasing torches or candles to light their home instead of using an open fire. Over half the households used open fire to light their home at baseline (57 percent). The CGP had a 26 percentage point impact on the number of households using a purchased method to light their home, such as candles or torch, with 86 percent of beneficiary households using a purchased method. Wood smoke from an open fire is very harmful to one's health, especially for children. According to a report about wood smoke by the World Health Organization in 2014, "4.3 million people a year die prematurely from illness attributable to the household air pollution caused by the inefficient use of solid fuels."[16] Thus, the CGP's impact on reducing the use of an open fire in the home also contributes to reducing health problems caused by wood smoke. Interestingly, both the treatment and control households experienced a large reduction from baseline in the use of open fires to light their home (although the treatment group's reduction was much greater than the control's). We found that many more treatment and control households used torches 30 months into the study than at baseline. We attribute this change to the introduction of low cost LED torches in rural Zambia. These LED torches generate light for a much longer time than traditional torches using the same number of batteries, making the LED torches very efficient and economical. LED torches appear to be more cost efficient than even candles, because we observe a shift in use from candles to torches in both the treatment and control groups during the 30 months.

[15] http://www.csd-i.org/installing-concrete-floors/
[16] http://www.who.int/mediacentre/factsheets/fs292/en/

Table 9.1: CGP Impacts on Housing Conditions

Dependent Variable	Program Impact (1)	Baseline Mean (2)	30M Treated Mean (3)	30M Control Mean (4)
Iron sheet roof	0.017	0.052	0.064	0.057
	(1.276)			
Cement floor	**0.030**	0.030	0.057	0.022
	(3.893)			
Brick wall	-0.048	0.324	0.346	0.354
	(-0.862)			
Purchased lighting	**0.255**	0.572	0.861	0.635
	(6.408)			
Purchased cooking	**0.060**	0.050	0.139	0.050
	(3.800)			
Clean water	0.065	0.222	0.316	0.242
	(1.533)			
Own latrine	**0.153**	0.443	0.668	0.568
	(2.782)			
N	4,814	2,455	1,177	1,182

NOTE: Estimations use difference-in-difference modeling among panel households. Robust t-statistics clustered at the CWAC level are in parentheses. Bold indicates that they are significant at $p < .05$. All estimations control for gender, age, household size, recipient age, education and marital status, districts, household demographic composition, and a vector of cluster-level prices.

X. Children

We investigate the impact of the program on an array of outcomes for children under 5 as well as older children. We find no new impacts to children under 5 compared with the 24-month report including for nutrition, feeding practices, and morbidity. Annex 5 contains the results for children under 5. Although the CGP targets households with children under 5, older children might benefit from living in a household that receives the program, depending on how the money is spent. The conceptual framework in section II demonstrates how the cash might have an impact on certain areas, such as children's material well-being, education, and health. At baseline, we ran simulations to predict where we believed impacts were most likely to occur, based on the estimated elasticity of demand and spending patterns. We concluded that material well-being would likely improve and that there could be a small change in school attendance, but we did not expect impacts for other older-child-related indicators because the transfers were not expected to be spent in ways to affect these outcomes. We investigate the effects of the CGP after 30 months on older children and find large impacts on material well-being, reduced labor for children of primary school age, and increased education outcomes for children in primary schools. But we do not find any impacts for children in secondary school or impacts to health outcomes.

Material Well-Being

The CGP increased ownership of basic material needs for children ages 5–17 at the 30-month follow-up, indicating that recipients used some of the transfer to purchase blankets, clothing, and shoes, items deemed necessary for supporting orphans and vulnerable children.[17] These impacts were consistent with the 24-month survey, where we found large increases in ownership of all three items. We continue to find large impacts on having all three needs met, as well as having shoes or a blanket. The CGP increased children's material well-being (all three needs met) by 30 percentage points (63.5 percent for the treatment group vs. 33.5 percent for the control group). This impact is largely driven by the increase in the number of children with shoes in recipient households (65 percent) compared with those in nonrecipient households (36 percent). We do not find impacts on having two sets of clothing, an indicator we found impacts on at the 24-month follow-up survey. There are three explanations for why this result went away at the 30-month period. First, both groups have more resources in June and July owing to selling their harvest, enabling them to purchase more items including clothing. Second, the cold weather during the harvest season may motivate parents in both groups to provide items such as warm clothing. Last, a ceiling effect occurred because the number of children with two sets of clothing in beneficiary households was already at 97 percent during the 24-month period, leaving little room for recipient households to improve more than nonrecipients on this indicator. There are no differential effects by gender. Table 10.1 lists the impacts for the basic needs indicators at 30 months and 24 months and compares the two impacts.

[17] The material well-being scale is a recommended indicator to measure care and support for orphaned and vulnerable children. See UNICEF. (2005). *Guide to monitoring and evaluation of the national response for children orphaned and made vulnerable by HIV/AIDS*. New York, NY: Author. Available at http://www.measuredhs.com/hivdata/guides/ovcguide.pdf

Table 10.1: Comparison of CGP Impacts on Basic Needs Met by Wave, Ages 5–17

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
All needs met	**0.325**	**0.381**	-0.055	0.104	0.635	0.335
	(5.831)	(5.526)	(-1.250)			
Shoes	**0.300**	**0.347**	-0.047	0.139	0.651	0.362
	(5.588)	(5.152)	(-1.044)			
Blanket	**0.159**	**0.177**	-0.018	0.553	0.963	0.834
	(4.966)	(5.888)	(-1.631)			
Two sets of clothing	0.055	**0.094**	**-0.040**	0.630	0.964	0.933
	(1.986)	(4.955)	(-2.787)			
N		14,958		4,710	2,739	2,813

NOTE: Estimations use difference-in-difference modeling among panel households. Robust t-statistics clustered at the CWAC level are in parentheses. Bold indicates that they are significant at $p < .05$. All estimations control for gender, age, household size, recipient age, education and marital status, districts, household demographic composition, and a vector of cluster-level prices.

Child Labor

Child labor, both paid and unpaid housework, relies on both supply and demand within the household. Household demand for labor depends on the time of year because most households are subsistence farmers whose demand for labor is driven by the seasonality of agricultural farming. The supply of child labor within a household depends on the number of children and their age (assuming that older children on average are more productive). For this reason we break up our analysis of child labor by primary and secondary school ages, while also investigating differential impacts by household size. We define primary school–age children as children 7–14 years old and secondary school–age children as household members 15–17 years old.[18]

We find no impact on child labor at the 30-month follow-up for both primary school–age and secondary school–age children. However, we find that the program decreased child labor after 30 months of program implementation by 7 percentage points from the 24-month follow-up period for primary school–age children. This difference in impact between waves appears to be driven by boys, because we find the decrease in labor is significant only for boys and not for girls. See Annex 6 for full results by gender. We do not find any change to child labor for secondary school–age children. Table 10.2 shows the results for child labor at 24 and 30 months into program implementation for primary school–age children and Table 10.3 shows the results for child labor at 24 and 30 months into program implementation for secondary school–age children.

Seasonal changes in the demand for labor may help explain these results. The demand for field labor is lowest during June and July, the period during which the 30-month survey was implemented, and highest in the lean season, the period in which both baseline and 24-month surveys were implemented. We also saw increased land use and overall agricultural activity in the 24-month analysis, suggesting that

[18] http://www.unicef.org/zambia/education.html

the demand for labor would be higher during the planting season. Thus, the CGP reduces primary school–age labor during the harvest season but does not affect child labor during the planting season when demand is greatest. Figure 10.1 shows the farming cycle in Zambia and when agricultural labor is in demand.

Table 10.2: Comparison of CGP Impacts on Child Labor in Past 2 Weeks by Wave, Primary School–Age Children, 7–14

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M-24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Engaged in any work	0.003	**0.075**	**-0.072**	0.589	0.892	0.916
	(0.071)	(2.225)	(-2.398)			
Engaged in paid work	-0.007	**-0.008**	0.001	0.023	0.007	0.015
	(-1.342)	(-2.217)	(0.196)			
Unpaid hours	-0.194	-2.237	2.043	21.210	15.067	13.927
	(-0.057)	(-0.682)	(1.071)			
N		7,394		1,741	1,513	1,621

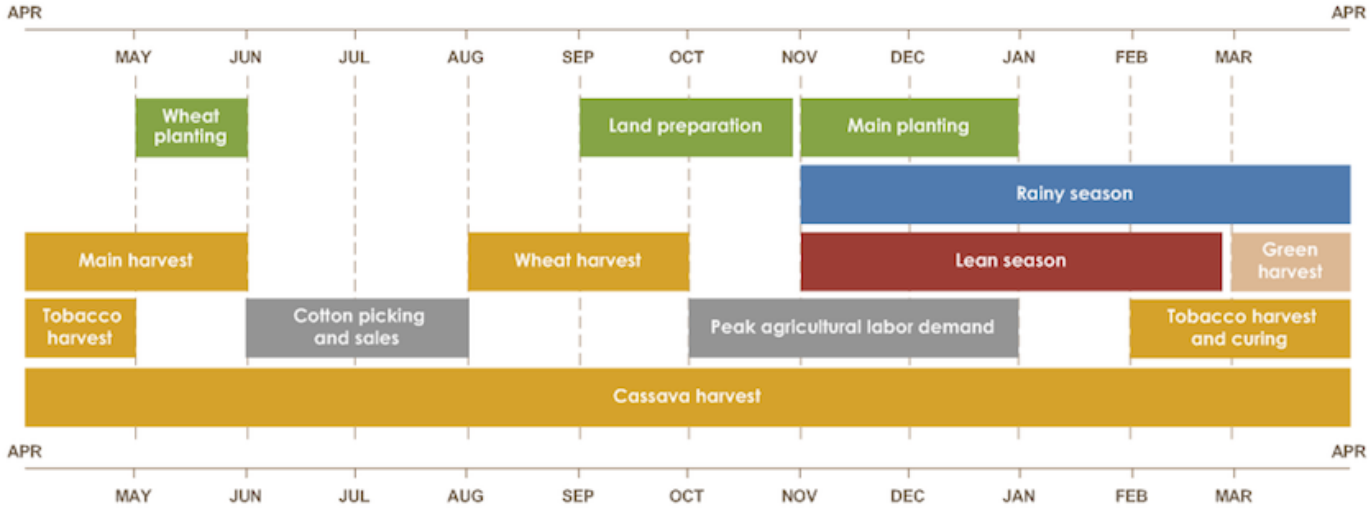
NOTE: Same notes as in Table 10.1.

Table 10.3: Comparison of CGP Impacts on Child Labor in Past 2 Weeks by Wave, Secondary School–Age Children, 15–17

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M-24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Engaged in any work	0.004	0.022	-0.017	0.792	0.981	0.989
	(0.130)	(0.952)	(-0.661)			
Engaged in paid work	-0.010	-0.027	0.018	0.111	0.046	0.053
	(-0.367)	(-1.054)	(0.697)			
Unpaid hours	-2.960	-3.004	0.045	27.569	20.756	20.519
	(-0.645)	(-0.665)	(0.014)			
N		1,799		469	398	345

NOTE: Same notes as in Table 10.1.

Figure 10.1: Seasonal Agricultural Calendar for a Typical Year in Zambia



Source: http://www.fews.net/southern-africa/zambia [FEWS Net—Family Early Warning System Net]

Education

At the 30-month follow-up we find impacts on several education outcomes for primary school–age children (7–14 years old), including current school enrollment, number of days in attendance, and full attendance during the prior week; however, there are no impacts for secondary school–age children (15–17 years old). The program increases primary school enrollment by 7 percentage points, with 86 percent of all recipient children ages 7–14 attending school. The CGP also increases the number of primary school–age children fully attending school by 5 percentage points, with 88 percent of enrolled beneficiary children having full attendance the week prior to the 30-month survey. However, there are no impacts on education for secondary school–age children. Table 10.4 lists the impacts on education for the 30-month round for primary school–age children. Table 10.5 lists these impacts for secondary school–age children.

The results for primary school–age children did not exist at the 24-month follow-up. One explanation for this difference could be that the lower demand for agricultural labor during the harvest season allows recipient children to attend school, particularly those of primary school age. The program has a greater likelihood to increase school enrollment and attendance in June and July, when labor demands are lower than during the height of agricultural labor demand for the land preparation part of the lean season. The difference in impacts of the program on the number of days in attendance between the 24- and 30-month rounds is not significant for girls, suggesting that the program has a greater impact for boys than girls on attendance. This result is consistent with the labor results where the decreased impact for labor is significant only for boys. See Annex 6 for full results by gender.

Table 10.4: Comparison of CGP Impacts on Child Education by Wave, Primary School Age, 7–14

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Currently enrolled (%)	**0.071**	0.005	**0.066**	0.741	0.861	0.807
	(3.728)	(0.239)	(3.698)			
Full attendance prior week (%)	**0.074**	0.060	0.013	0.790	0.888	0.811
	(2.615)	(1.832)	(0.435)			
Number of days in attendance prior week (0–5)	**0.484**	0.209	**0.274**	3.303	4.110	3.719
	(3.372)	(1.377)	(2.437)			
N		9,451		2,963	1,694	1,771

NOTE: Same notes as in Table 10.1.

Table 10.5: Comparison of CGP Impacts on Child Education by Wave, Secondary School Age, 15–17

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M-24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Currently enrolled (%)	-0.005	-0.059	0.054	0.657	0.821	0.742
	(-0.096)	(-1.230)	(1.129)			
Full attendance prior week (%)	-0.016	-0.032	0.016	0.802	0.861	0.832
	(-0.300)	(-0.511)	(0.301)			
Number of days in attendance prior week (from 0-5)	-0.119	-0.348	0.229	2.897	3.938	3.496
	(-0.460)	(-1.455)	(0.977)			
N		1,949		603	385	345

NOTE: Same notes as in Table 10.1.

XI. Agricultural Production

Crop Production

We look at various dimensions of the productive process to assess whether households have increased spending in agricultural activities, including crop production and crop input use.

In terms of direct impacts on crop activity (Table 11.1), we find positive and significant impacts on the area of land operated in both lean and harvest seasons. The CGP increases the amount of operated land by 0.23 hectares. That is, at 30 months, treatment households operate 0.9 hectares on average compared with 0.5 hectares at baseline. The increase in operated land at 30 months is concentrated among large households with a program impact of 0.35 additional hectares relative to the control group (Annex Tables A7.1 and A7.2). Program impacts on total crop expenditures in the harvest season (ZMW 12) are lower and not significantly different from those of the control group. This is in contrast to the lean season, when treated households exhibit impacts on total crop expenditures, including expenditures in inputs such as seeds.

Table 11.1: Impact of CGP on Crop Input Use and Land Use (ZK)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Operated land (has)	**0.227**	**0.209**	0.018	0.502	0.900	0.673
	(2.587)	(2.305)	(0.272)			
Total crop exp	12.000	**26.564**	-14.564	18.024	50.362	28.201
	(1.126)	(2.531)	(-1.843)			
Exp seed	5.133	**8.158**	-3.025	5.093	16.056	9.746
	(1.252)	(3.910)	(-0.733)			
Exp hired labor	2.204	7.366	-5.162	6.204	17.529	7.628
	(0.402)	(1.385)	(-1.580)			
Exp pesticides	-0.126	0.004	-0.131	0.022	0.185	0.312
	(-0.416)	(0.031)	(-0.400)			
Exp fertilizer	3.655	6.908	-3.253	1.263	7.940	4.747
	(1.411)	(1.861)	(-1.365)			
Other crop exp	5.457	11.455	-5.999	11.669	30.727	15.976
	(0.720)	(1.690)	(-1.235)			
N		7,064		2,459	1,178	1,185

NOTE: Estimations use difference-in-difference modeling among panel households. Robust t-statistics clustered at the CWAC level are in parentheses. Bold indicates that they are significant at $p < .05$. All estimations control for household size, recipient age, education and marital status, districts, household demographic composition, and a vector of cluster-level prices.

Turning to crop production, we focus primarily on the three most important crops (maize, cassava, and rice) and aggregate all production by the value of the total harvest.[19] First, the program has facilitated some shifts in production in beneficiary households compared with control households. In the 6 months before the 30-month wave, the share of households planting maize is 8 percentage points higher for beneficiary households than for control households (Table 11.2). In contrast to the 24-month wave, there are no differences between treatment and control groups in the production of rice and cassava. In terms of less important crops, whereas small treatment households are still more likely at 30 months to produce groundnuts than control households, large treatment households are more likely to produce sorghum than control households (Annex Tables A7.3 and A7.4).

Table 11.2: Impact of CGP on Crop Production (Share)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Maize	0.080	**0.088**	-0.008	0.553	0.745	0.666
	(1.684)	(2.083)	(-0.207)			
Cassava	0.004	-0.029	0.033	0.262	0.337	0.376
	(0.101)	(-0.732)	(1.118)			
Rice	0.017	**0.075**	**-0.058**	0.163	0.167	0.161
	(0.735)	(2.489)	(-2.701)			
Millet	0.008	0.010	-0.002	0.063	0.056	0.050
	(0.606)	(0.778)	(-0.110)			
Groundnut	0.020	**0.035**	-0.015	0.048	0.075	0.069
	(1.239)	(2.187)	(-0.901)			
Sweet potatoes	0.013	-0.001	0.013	0.043	0.036	0.030
	(1.074)	(-0.068)	(1.097)			
Sorghum	0.011	**0.016**	-0.004	0.036	0.039	0.031
	(1.938)	(2.150)	(-0.499)			
Other beans	0.005	0.011	-0.006	0.013	0.014	0.017
	(0.971)	(1.630)	(-0.844)			
N		6,571		2,459	1,054	1,065

NOTE: Same notes as in Table 11.1.

Aggregating all output by value at 30 months, we find that the CGP has had a positive impact (at the 10 percent level) in the value of all crops harvested—ZMW 283 (Table 11.3). With the exception of maize for large treatment households (Table A7.6), we find few significant impacts on the output of specific crops. The little impact on specific crops could be the result of a diffuse increase in production across crops.

[19] The value of total harvest is the product of harvest quantity and the median unit price; the latter is computed from crop sales at the district level and, if missing, at the level of all three districts.

Table 11.3: Impact of CGP on Crop Production (kg and 2012 ZMW)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Maize	**108.641**	**71.969**	36.672	150.131	290.465	178.624
	(2.768)	(2.230)	(1.094)			
Cassava	29.607	-50.810	80.416	150.600	332.026	286.531
	(0.463)	(-0.973)	(1.347)			
Rice	36.207	**62.993**	**-26.786**	79.926	75.697	48.385
	(1.320)	(2.027)	(-2.038)			
Millet	-1.031	3.273	-4.304	7.518	5.835	9.366
	(-0.470)	(0.967)	(-1.090)			
Groundnut	9.387	2.898	6.489	11.595	23.093	20.244
	(1.086)	(0.411)	(0.624)			
Sweet potatoes	8.648	-2.598	11.247	6.338	10.778	5.662
	(1.679)	(-0.387)	(1.548)			
Sorghum	3.673	4.356	-0.683	5.628	4.042	4.296
	(0.981)	(1.249)	(-0.375)			
Other beans	-0.349	-0.095	-0.255	1.009	1.210	1.845
	(-0.358)	(-0.115)	(-0.237)			
Value of harvest	**283.945**	127.628	156.318	353.274	832.234	556.305
	(2.211)	(1.680)	(1.433)			
N		6,571		2,459	1,054	1,065

NOTE: Same notes as in Table 11.1.

Last, the shares of beneficiary households who market their crop production or consume it at home are not statistically different from the control group at 30 months (Table 11.4). Similarly, the value of production sold and consumed at home is also not statistically different between treatment and control households at the harvest season.

Table 11.4: Impact of CGP on Agricultural Production

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
% of crops sold	-0.070	**0.060**	-0.131	0.101	0.110	0.187
	(-0.767)	(2.885)	(-1.409)			
Value of sales (ZMW)	14.165	**78.766**	-64.601	68.150	194.803	181.706
	(0.147)	(2.569)	(-0.694)			
% of crops consumed	-0.059	-0.043	-0.016	0.692	0.573	0.651
	(-1.581)	(-1.021)	(-0.497)			
Value consumed at home (ZMW)	92.646	23.904	68.742	180.510	334.768	241.120
	(1.760)	(0.857)	(1.344)			
N		5,845		1,926	990	998

NOTE: Same notes as in Table 11.1.

XII. Nonfarm Business Activities

Beneficiary households of the CGP are significantly more likely to have a nonfarm enterprise (Table 12.1). The share of beneficiary households operating a nonfarm enterprise increases by 14 percentage points relative to the control households, with no differential impacts between the 24- and 30-month waves.. In addition, the impacts are similar for both small and large households (see Annex 8 Tables A8.1 and A8.2).

Table 12.1: CGP Impacts on Nonfarm Enterprises (NFE)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff (1)–(2) (3)	24M Means Treated (4)	24M Means Control (5)	30M Means Treated (6)	30M Means Control (7)
HH operates NFE	**0.144**	**0.161**	-0.018	0.47	0.29	0.49	0.32
	(4.202)	(4.624)	(-0.403)				
Months in operation	0.27	0.54	-0.27	7.5	6.8	5.4	5.1
	(1.06)	(1.55)	(-0.63)				
Monthly profit (ZMW)[1]	17.0	**34.7**	-17.7	148.2	107.2	139.3	117.8
	(1.500)	(2.935)	(-1.117)				
N		1,810		526	322	579	383

NOTE: Estimations use single difference modeling. Robust t-statistics clustered at the CWAC level are in parentheses. Bold indicates that they are significant at $p < .05$. All estimations control for household size, recipient age, education and marital status, districts, and household demographic composition. 1. The highest 5% values for this outcome were discarded owing to unlikely large values for this population.

XIII. Conclusion

This report uses data collected in June and July 2013, some 30 months after baseline and just after the harvest season in Zambia. It thus coincides with a time when rural households have more food and resources than at any other time of year. We have already found that the CGP greatly improved food security, reduced poverty, and increased shoes, blankets, and clothing (material needs) for children during the lean season, after 24 months of program implementation. This report addresses several new evaluation questions: Do these impacts remain the same or change during the harvest season? Does the CGP enable households to smooth consumption over the agricultural season? How do beneficiary households use the transfer during a time of year when they already have greater food security?

The results show that the consumption of beneficiary households has stabilized, in the sense that there is no further increase in consumption among treatment households. And although consumption among control households increases owing to the harvest, it still remains significantly lower than that among CGP households. Food consumption among treatment households has also stabilized even as it increased significantly among control households during the harvest period. One of the principle results of this report, therefore, is that the CGP has successfully enabled households to smooth their consumption over the agricultural cycle, a result with far-reaching consequences in terms of the ability of households to withstand one of the most important economic shocks they face annually and to allow them to engage in more forward-looking behavior.

In light of this important result, where do CGP recipients spend their money during the harvest season? Given the wide range of impact already observed at 24-months, we look for either larger impacts at 30 months than at 24 months or new impacts and find some of both. We observe larger impacts on holdings of chickens and possession of mosquito nets and agricultural picks. We also find new impacts on housing characteristics, which we did not measure at 24 months. CGP households are now significantly less likely to use an open fire for lighting or cooking, which can have long-term implications for health. Recipients are also significantly more likely to have a latrine and a cement floor, which also have strong implications for health status. Perhaps most interesting is the finding that CGP households are significantly more likely to have reduced their long-term debt and less likely to take out new debt.

Beyond the results summarized above, we continue to monitor impacts on conventional indicators of child development such as schooling, health, and nutrition, and these are summarized briefly here. We find that the program increases primary school enrollment and attendance during the lean season, especially among boys. We did not observe this result at the 24-month period. We believe this impact on education occurs in the harvest season because the demand for labor in the field is lower in the harvest season than in September and October when households need to prepare their land (the timing of the baseline and 24-month reports). This belief is supported by the finding that child labor among beneficiary households is lower at the 30-month period than at the 24-month period, especially for primary school–age boys. In other words, the program seems able to impact school enrollment for primary school–age children when demand for labor is not at its peak (during the planting season in September and October). We also continue to find impacts on material needs, although the levels of

these impacts are the same as from the 24-month period. We do not find any impacts to young child nutrition or health, similar to the lack of results during the 24-month period. Table 13.1 links each program objective with the indicators reported here.

Table 13.1: Summary of Impacts in Areas Directly Linked to CGP Objectives

Supplement and not replace household income	Increase of ZMW 12.3 in monthly per capita consumption expenditure Reduction of 9 percentage points in poverty gap and 8 percentage points in the squared poverty gap
Increase the number of households having a second meal per day	Increase of 8 percentage points in households with 2+ meals per day Increase of 22 percentage points in proportion of children ages 6 to 24 months receiving minimum feeding requirements
Increase the number of children enrolled in and attending primary school	Increase of 7 percentage points in primary school enrollment. Increase of 5 percentage points in the percentage of children fully attending school.
Increase the number of households owning assets such as livestock	Increase of 22 percentage points in households owning chickens, 17 percentage points increase in owning cattle.

Annex 1: Difference-in-Differences Estimation

The statistical approach we take to derive average treatment effects of the CGP is the difference-in-differences (DD) estimator. This entails calculating the change in an indicator (Y), such as food consumption, between baseline and follow-up periods for treatment and comparison group units and comparing the magnitude of these changes.

The DD is one of the strongest estimators available in the evaluation literature (Shadish et al., 2002). Two key features of this design are particularly attractive for deriving unbiased program impacts. First, using pre- and posttreatment measures allows us to "difference" out unmeasured fixed (i.e., time-invariant) family or individual characteristics that may affect outcomes, such as motivation, health endowment, mental capacity, and unobserved productivity. It also allows us to benchmark the change in the indicator against its value in the absence of treatment. Second, using the change in a control group as a comparison allows us to account for general trends in the value of the outcome. For example, if there is a general increase in school enrollment owing to expansion of school access, deriving treatment effects only on the basis of the treatment group will confound program impacts on schooling with the general trend increase in schooling.

The key assumption underpinning the DD is that there is no systematic unobserved time-varying difference between the treatment and control groups. For example, if the treatment group changes its preference for schooling over time but the control group does not, then we would attribute a greater increase in schooling in the treatment group to the program rather than to this unobserved time-varying change in characteristic. In practice, the random assignment to treatment and control groups is the geographical proximity of the samples, and the rather short duration between pre- and postintervention measurements will make this assumption quite reasonable.

Figure A1.1 illustrates how the estimate of differences in differences between treatment (T) and control (C) groups is computed. The top row shows the baseline and postintervention values of the indicator (Y), and the last cell in that row depicts the change or difference in the value of the outcome for T units. The second row shows the value of the indicator at baseline and postintervention for comparison group units, and the last cell illustrates the change or difference in the value of this indicator over time. The difference between these two differences (treatment vs. control), shown in the shaded cell in Figure A2.1, is the difference-in-differences or double-difference estimator.

Figure A1.1: The Difference-in-Differences (DD) Estimator (Post = 24-month follow-up)

	Baseline (2010)	Post (2012)	1st difference
Treatment (T)	Y^T_0	Y^T_{24}	$\Delta Y^T_{24}=(Y^T_{24}-Y^T_0)$
Comparison (C)	Y^C_0	Y^C_{24}	$\Delta Y^C_{24}=(Y^C_{24}-Y^C_0)$
			Difference in differences DD_{24} $= (\Delta Y^T_{24} - \Delta Y^C_{24})$

A convenient way to implement the DD methodology is through an ordinary least squares regression. In particular, the DD estimator presented in Figure A1.1 can be specified as follows:

$$Y_{i,g,wave} = \alpha_{24} + \beta_{1,24} * d_{g=Treat} + \beta_{2,24} * d_{wave=24} + \beta_{3,24} * d_{g=Treat} * d_{wave=24} + \varepsilon_{i,g,wave}$$

where

- $d_{g=Treat}$ is an indicator variable equal to 1 if observation **i** belongs to the treatment condition and equal to zero otherwise;
- $d_{wave=24}$ is an indicator variable equal to 1 if observation **i** belongs to the 24-month wave and equal to zero for a variable measured at baseline (i.e., 2010); and
- $\beta_{3,24}$ is equivalent to DD_{24} in Figure A2.1, the effect of the program after 24 months of being implemented.

The differences in differences estimator can also be applied to different follow-up waves to estimate the effects of the program at a given point in time. That is, instead of using the 24-month follow-up as in Figure A1.1, we can use data from the 30-month wave collected in 2013 to estimate CGP impacts at the harvest season. Figure A1.2 presents DD impact estimation at the 30-month wave (i.e., $DD_{30} = \Delta Y^{T}_{30} - \Delta Y^{C}_{30}$), which essentially differences out the average change in the outcome between the 30-month and baseline waves for both the treatment (i.e., ΔY^{T}_{30}) and control groups (i.e., ΔY^{c}_{30}).

Figure A1.2: The Difference-in-Differences (DD) Estimator (Post = 30-month follow-up)

	Baseline (2010)	Post (2013)	1st difference
Treatment (T)	Y^{T}_{0}	Y^{T}_{30}	$\Delta Y^{T}_{30}=(Y^{T}_{30}-Y^{T}_{0})$
Comparison (C)	Y^{C}_{0}	Y^{C}_{30}	$\Delta Y^{C}_{30}=(Y^{C}_{30}-Y^{C}_{0})$
			Difference in differences DD_{30} $= (\Delta Y^{T}_{30} - \Delta Y^{C}_{30})$

Note that the DD_{30} can also be estimated using the following linear regression framework:

$$Y_{i,g,wave} = \alpha_{30} + \beta_{1,30} * d_{g=Treat} + \beta_{2,30} * d_{wave=30} + \beta_{3,30} * d_{g=Treat} * d_{wave=30} + \varepsilon_{i,g,wave}$$

where

- $d_{g=Treat}$ is an indicator variable equal to 1 if observation **i** belongs to the treatment condition and equal to zero otherwise;
- $d_{wave=30}$ is an indicator variable equal to 1 if observation **i** belongs to the 30-month wave and equal to zero for a variable measured at baseline (i.e., 2010); and
- $\beta_{3,30}$ is equivalent to DD_{30} in Figure A1.2, the effect of the program after 30 months of being implemented.

Note also that both DD_{24} and DD_{30} can be estimated simultaneously using a combined linear regression specified as follows:

$$Y_{i,g,wave} = \alpha \quad + \beta_1 * d_{g=Treat} + \beta_{2,24} * d_{wave=24} \; + \beta_{2,30} * d_{wave=30} + \beta_{3,24} * d_{g=Treat} * d_{wave=24} + \beta_{3,30} * d_{g=Treat} * d_{wave=30} \; + \varepsilon_{i,g,wave}$$

where

- $\beta_{3,24}$ is equivalent to DD_{24} in Figure A1.1 and
- $\beta_{3,30}$ is equivalent to DD_{30} in Figure A1.2.

This last specification is the one used throughout this report to estimate the effects of the program. The combined specification allows us to test for differential impacts of the program between the 24- and 30-month waves by testing whether $\beta_{3,24} = \beta_{3,30}$

Note also that one of the advantages of using a linear regression specification is the ability to control for other determinants of the outcomes of interest in order to obtain program impacts that are more precisely estimated. For example, when estimating outcomes at the household level, such as food expenditures, we control for household size, recipient's age, education and marital status, district fixed effects, household demographic composition, and a vector of cluster-level prices.

Annex 2: Mean Differences at Baseline for Attrition Analysis

Table A2.1: Household Level Control Comparisons (Control versus Treatment for Respondent Households)

Variables	Control Mean	Control N1	Treatment Mean	Treatment N2	T-C Diff	Diff SE	Effect Size
Household size	5.656	1,185	5.778	1,179	0.122	0.179	0.058
Number of children ages 0-5	1.922	1,185	1.899	1,179	-0.022	0.057	-0.029
Distance to food market	24.079	846	19.261	821	-4.817	5.845	-0.153
Distance to health facility	13.633	1,137	13.375	1,137	-0.258	2.426	-0.012
HH was affected by drought	0.053	1,185	0.051	1,179	-0.002	0.020	-0.010
HH was affected by flood	0.074	1,185	0.034	1,179	-0.040	0.027	-0.178
HH was affected by any shocks	0.192	1,185	0.184	1,179	-0.008	0.061	-0.019

Notes: Diff is the average difference between Treatment and Control, and SE is the standard error of this difference clustered at the CWAC level.

Table A2.2 Household Level Outcome Comparisons (Control versus Treatment for Respondent Households)

Variables	Control Mean	Control N1	Treatment Mean	Treatment N2	T-C Diff	Diff SE	Effect Size
Per capita food expenditure, kwacha (not rebased)	28,809	1,185	30,076	1,179	1,266	2,166	0.049
Food share of total household expenditure	0.717	1,185	0.717	1,178	-0.001	0.013	-0.00
Cereal as share of total food expenditure	0.312	1,185	0.339	1,176	0.027	0.040	0.102
Roots and tubers as share of total food expenditure	0.173	1,185	0.152	1,176	-0.020	0.036	-0.09
Pulses and legumes as share of total food expenditure	0.030	1,185	0.029	1,176	-0.001	0.005	-0.02
Fruits and vegetables as share of total food expenditure	0.229	1,185	0.210	1,176	-0.019	0.017	-0.11
Meats, poultry, fish as share of total food expenditure	0.169	1,185	0.183	1,176	0.014	0.012	0.087
Total household expenditure per person in the household (not rebased)	38,898	1,185	40,585	1,179	1,687	2,559	0.054
Food security scale	15.420	1,167	15.076	1,155	-0.344	0.582	-0.06

Notes: Diff is the average difference between Treatment and Control, and SE is the standard error of this difference clustered at the CWAC level.

Table A2.3: Children under 5 Control Comparisons (Control versus Treatment for Respondent Households)

Variables	Control Mean	Control N1	Treatment Mean	Treatment N2	T-C Diff	Diff SE	Effect Size
Age in months	26.684	1,993	26.171	1,981	-0.513	0.433	-0.032
Female	0.498	1,993	0.524	1,981	0.026	0.015	0.052
Highest grade level of primary care giver	5.185	1,387	5.699	1,434	0.513	0.220	0.201
BCG vaccination	0.959	1,968	0.958	1,949	-0.001	0.007	-0.005
Oral polio vaccination	0.957	1,967	0.950	1,943	-0.007	0.008	-0.034
DPT vaccination	0.944	1,963	0.943	1,937	-0.001	0.009	-0.005

Notes: Diff is the average difference between Treatment and Control, and SE is the standard error of this difference clustered at the CWAC level.

Table A2.4: Children Under 5 Outcome Comparisons (Control versus Treatment for Respondent Households)

Variables	Control Mean	Control N1	Treatment Mean	Treatment N2	T-C Diff	Diff SE	Effect Size
Weight children 0-3 months	11.813	1,914	11.801	1,893	-0.012	0.347	-0.001
Height (cms) children 0-3 months	80.181	1,811	78.563	1,781	-1.619	1.128	-0.084
Received vitamin a dose last 6 months	0.760	1,674	0.799	1,664	0.039	0.033	0.095
Had diarrhea in the past 2 weeks	0.177	1,966	0.201	1,944	0.024	0.022	0.062
Has been ill with fever last 2 weeks	0.232	1,978	0.236	1,960	0.004	0.031	0.009

Notes: Diff is the average difference between Treatment and Control, and SE is the standard error of this difference clustered at the CWAC level.

Table A2.5: Children Under 5 Anthropometrics (Control versus Treatment for Respondent Households)

Variables	Control Mean	Control N1	Treatment Mean	Treatment N2	T-C Diff	Diff SE	Effect Size
Child's Height-for-Age (z-score)	-1.427	1,675	-1.426	1,603	0.000	0.085	0.000
Child's Weight-for-Age (z-score)	-0.884	1,876	-0.947	1,840	-0.063	0.056	-0.049
Child's Weight-for-Height (z-score)	-0.155	1,673	-0.210	1,596	-0.055	0.062	-0.045

Notes: Diff is the average difference between Treatment and Control, and SE is the standard error of this difference clustered at the CWAC level.

Table A2.6: Children Aged 3-7 Development Scores (Control versus Treatment for Respondent Households)

Variables	Control Mean	Control N1	Treatment Mean	Treatment N2	T-C Diff	Diff SE	Effect Size
Development scale 1: Play with items	1.451	933	1.486	869	0.034	0.067	0.044
Care scale: Family engagement activities	2.435	933	2.224	869	-0.211	0.177	-0.096
Development scale 2: skills/behaviors	3.986	933	4.046	869	0.060	0.159	0.029

Notes: Diff is the average difference between Treatment and Control, and SE is the standard error of this difference clustered at the CWAC level.

Table A2.7: Older Child (5-17) Characteristics (Control versus Treatment for Respondent Households)

Variables	Control Mean	Control N1	Treatment Mean	Treatment N2	T-C Diff	Diff SE	Effect ES
Age in years	9.606	2,315	9.822	2,360	0.216	0.111	0.061
Female	0.491	2,315	0.519	2,360	0.028	0.016	0.056
Maternal orphan	0.074	2,315	0.083	2,360	0.009	0.017	0.032
Paternal orphan	0.155	2,315	0.177	2,360	0.022	0.022	0.058
OVC	0.202	2,315	0.225	2,360	0.023	0.027	0.057
Minimum needs met	0.782	2,315	0.764	2,360	-0.019	0.036	-0.045
Ever enrolled in school	0.641	2,300	0.650	2,348	0.009	0.023	0.018
Currently enrolled in school	0.582	2,300	0.591	2,348	0.009	0.023	0.017
Full attendance in prior week	0.781	1,302	0.804	1,334	0.022	0.030	0.055
Paid or unpaid work	0.531	2,281	0.513	2,302	-0.017	0.040	-0.035
Unpaid hours last 2 weeks	20.946	1,191	22.475	1,150	1.529	2.953	0.069

Notes: Diff is the average difference between Treatment and Control, and SE is the standard error of this difference clustered at the CWAC level.

Table A2.8: Household Level Control Comparisons (Full Sample Versus Sample Remaining at 30-month Follow-up)

Variables	Full Sample Mean	Full Sample N1	Remaining Sample Mean	Remaining Sample N2	R-F Diff	Diff SE	Effect Size
Household size	5.705	2,460	5.717	2,364	0.011	0.009	0.005
Number of children ages 0 - 5	1.908	2,460	1.910	2,364	0.002	0.004	0.003
Distance to food market	21.831	1,730	21.706	1,667	-0.12	0.193	-0.004
Distance to health facility	13.527	2,365	13.504	2,274	-0.02	0.085	-0.001
HH was affected by drought	0.052	2,460	0.052	2,364	0.000	0.001	0.002
HH was affected by flood	0.055	2,460	0.054	2,364	-0.00	0.001	-0.005
HH was affected by any shocks	0.190	2,460	0.188	2,364	-0.00	0.002	-0.006

Notes: Diff is the average difference between full and the remaining samples, and SE is the standard error of this difference clustered at the CWAC level.

Table A2.9: Household Level Outcome Comparisons (Full Sample Versus Sample Remaining at 30-month Follow-up)

	Full Sample		Remaining Sample		R-F	Diff	Effect
Variables	**Mean**	**N1**	**Mean**	**N2**	**Diff**	**SE**	**Size**
Per capita food expenditure, kwacha (not rebased)	29,499	2,460	29,441	2,364	-58.15	111.8	-0.002
Food share of total household expenditure	0.718	2,459	0.717	2,363	-0.001	0.001	-0.008
Cereal as share of total food expenditure	0.324	2,457	0.325	2,361	0.002	0.001	0.007
Roots and tubers as share of total food expenditure	0.164	2,457	0.162	2,361	-0.001	0.001	-0.006
Pulses and legumes as share of total food expenditure	0.029	2,457	0.029	2,361	0.000	0.000	0.004
Fruits and vegetables as share of total food expenditure	0.219	2,457	0.219	2,361	0.000	0.001	0.002
Meats, poultry, fish as share of total food expenditure	0.177	2,457	0.176	2,361	-0.001	0.001	-0.006
Total household expenditure per person in the household (not rebased)	39,802	2,460	39,739	2,364	-62.67	136.8	-0.002
Food security scale	15.224	2,416	15.249	2,322	0.025	0.027	0.004

Notes: Diff is the average difference between full and the remaining samples, and SE is the standard error of this difference clustered at the CWAC level.

Table A2.10: Children under 5 Control Comparisons (Full Sample Versus Sample Remaining at 30-month Follow-up)

	Full Sample		Remaining Sample		R-F	Diff	Effect
Variables	**Mean**	**N1**	**Mean**	**N2**	**Diff**	**SE**	**Size**
Age in months	26.485	4,130	26.429	3,974	-0.06	0.038	-0.004
Female	0.510	4,130	0.511	3,974	0.001	0.002	0.002
Highest grade level of primary care giver	5.426	2,936	5.446	2,821	0.020	0.014	0.008
BCG vaccination	0.959	4,068	0.959	3,917	-0.00	0.000	-0.003
Oral polio vaccination	0.954	4,061	0.953	3,910	-0.00	0.000	-0.006
DPT vaccination	0.945	4,051	0.944	3,900	-0.00	0.000	-0.006

Notes: Diff is the average difference between full and the remaining samples, and SE is the standard error of this difference clustered at the CWAC level.

Table A2.11: Children under 5 Outcome Comparisons at Baseline (Full Sample Versus Sample Remaining at 30-month Follow-up)

	Full Sample		Remaining Sample		R-F	Diff	Effect
Variables	**Mean**	**N1**	**Mean**	**N2**	**Diff**	**SE**	**Size**
Weight children 0-3 months	11.777	3,957	11.807	3,807	0.029	0.011	0.003
Height (cms) children 0-3 months	79.464	3,732	79.379	3,592	-0.08	0.045	-0.004
Received vitamin a dose last 6 months	0.777	3,465	0.780	3,338	0.002	0.002	0.005
Had diarrhea in the past 2 weeks	0.190	4,064	0.188	3,910	-0.00	0.001	-0.004
Has been ill with fever last 2 weeks	0.234	4,092	0.234	3,938	-0.00	0.001	-0.001

Notes: Diff is the average difference between full and the remaining samples, and SE is the standard error of this difference clustered at the CWAC level.

Table A2.12 Children under 5 Anthropometrics (Full Sample Versus Sample Remaining at 30-month Follow-up)

	Full Sample		Remaining Sample		R-F	Diff	Effect
Variables	**Mean**	**N1**	**Mean**	**N2**	**Diff**	**SE**	**Size**
Child's Height-for-Age (z-score)	-1.437	3,411	-1.426	3,278	0.010	0.005	0.006
Child's Weight-for-Age (z-score)	-0.921	3,866	-0.915	3,716	0.006	0.005	0.004
Child's Weight-for-Height (z-score)	-0.175	3,401	-0.182	3,269	-0.00	0.005	-0.005

Notes: Diff is the average difference between full and the remaining samples, and SE is the standard error of this difference clustered at the CWAC level.

Table A2.13 Children (3-7) Development Scores (Full Sample Versus Sample Remaining at 30-month Follow-up)

	Full Sample		Remaining Sample		R-F	Diff	Effect
Variables	**Mean**	**N1**	**Mean**	**N2**	**Diff**	**SE**	**Size**
Development scale 1: Play with items	1.471	1,874	1.468	1,802	-0.00	0.004	-0.004
Care scale: Family engagement activities	2.324	1,874	2.334	1,802	0.010	0.010	0.004

Development scale 2: skills/behaviors	4.033	1,874	4.015	1,802	-0.02	0.010	-0.008

Notes: Diff is the average difference between full and the remaining samples, and SE is the standard error of this difference clustered at the CWAC level.

Table A2.14 Older Child (5-17) Characteristics at Baseline (Full Sample Versus Sample Remaining at 30-month Follow-up)

	Full Sample		Remaining Sample		R-F	Diff	Diff
Variables	**Mean**	**N1**	**Mean**	**N2**	**Diff**	**SE**	**ES**
Age in years	9.714	4,850	9.715	4,675	0.001	0.009	0.000
Female	0.503	4,850	0.505	4,675	0.002	0.001	0.004
Maternal orphan	0.078	4,850	0.079	4,675	0.001	0.001	0.003
Paternal orphan	0.166	4,850	0.166	4,675	0.000	0.001	0.000
OVC	0.213	4,850	0.213	4,675	0.001	0.001	0.002
Minimum needs met	0.771	4,850	0.773	4,675	0.001	0.002	0.004
Ever enrolled in school	0.645	4,822	0.646	4,648	0.001	0.002	0.002
Currently enrolled in school	0.585	4,822	0.586	4,648	0.002	0.002	0.004
Full attendance in prior week	0.790	2,728	0.792	2,636	0.002	0.002	0.005
Paid or unpaid work	0.522	4,751	0.522	4,583	0.001	0.002	0.001
Unpaid hours last 2 weeks	21.529	2,425	21.697	2,341	0.168	0.106	0.008

Notes: Diff is the average difference between full and the remaining samples, and SE is the standard error of this difference clustered at the CWAC level.

Annex 3: Expenditure, Consumption Smoothing, and Poverty

Table A3.1: CGP Impacts on Per-Capita Expenditures—Small Households (ZMW 2010 = 100)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Total	**13.46**	**16.45**	-3.00	47.62	75.59	60.07
	(2.44)	(3.81)	(-0.56)			
Food	7.94	**12.90**	-4.96	35.64	56.80	46.96
	(1.80)	(3.64)	(-1.09)			
Clothing	**0.93**	**1.08**	-0.15	1.54	2.29	1.50
	(3.89)	(5.31)	(-0.85)			
Education	0.07	-0.29	0.36	0.23	0.55	0.49
	(0.27)	(-0.71)	(1.99)			
Health	**1.39**	**1.40**	-0.00	2.77	4.41	2.93
	(2.89)	(3.80)	(-0.01)			
Domestic	1.54	0.64	0.90	6.18	7.83	6.10
	(1.61)	(0.81)	(1.05)			
Transport/Communication	**1.43**	0.66	0.77	0.69	2.68	1.29
	(2.35)	(1.38)	(1.13)			
Other	-0.02	-0.03	0.00	0.13	0.43	0.38
	(-0.20)	(-0.18)	(0.05)			
Alcohol, Tobacco	0.22	0.13	0.09	0.40	0.60	0.42
	(0.85)	(0.61)	(0.41)			
N		3,567		1,245	584	604

NOTE: Estimations use difference-in-difference modeling among panel households. Robust t-statistics clustered at the CWAC level are in parentheses. Bold indicates that they are significant at $p < .05$. All estimations control for household size, recipient age, education and marital status, districts, household demographic composition and a vector of cluster-level prices.

Table A3.2: CGP Impacts on Expenditure Shares—Small Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Food	-0.011	0.006	-0.017	0.727	0.755	0.763
	(-0.716)	(0.435)	(-1.421)			
Clothing	**0.008**	**0.009**	-0.001	0.035	0.034	0.029
	(2.300)	(2.588)	(-0.238)			
Education	0.002	-0.002	0.004**	0.006	0.008	0.007
	(0.980)	(-0.856)	(2.988)			
Health	0.008	0.008	0.000	0.061	0.061	0.053
	(1.384)	(1.478)	(0.021)			
Domestic	-0.015	-0.025	0.011	0.155	0.107	0.123
	(-1.057)	(-1.807)	(1.092)			
Transport/Communication	0.008	0.003	0.005	0.008	0.022	0.013
	(1.892)	(0.592)	(1.113)			
Other	-0.000	0.002	-0.002	0.002	0.006	0.007
	(-0.268)	(1.516)	(-1.405)			

Alcohol, Tobacco	0.001	0.001	-0.000	0.006	0.007	0.006
	(0.358)	(0.457)	(-0.103)			
N		3,566		1,244	584	604

NOTE: Same notes as in Table A3.1

Table A3.3: CGP Impacts on Per-Capita Expenditures—Large Households (ZMW 2010 = 100)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Total	**11.02**	**12.70**	-1.68	31.87	59.64	46.71
	(2.93)	(4.25)	(-0.53)			
Food	**6.96**	**9.43**	-2.46	23.23	44.21	35.97
	(2.37)	(4.09)	(-0.92)			
Clothing	**0.66**	**0.66**	-0.00	0.99	1.88	1.14
	(4.15)	(4.51)	(-0.01)			
Education	0.29	**0.47**	-0.17	0.67	1.69	1.27
	(1.36)	(2.00)	(-0.69)			
Health	**0.99**	**0.81**	0.19	1.66	3.18	2.10
	(3.60)	(3.69)	(0.78)			
Domestic	0.43	0.30	0.13	4.02	5.13	4.40
	(0.65)	(0.48)	(0.26)			
Transport/Communication	**1.51**	**1.13**	0.38	0.79	2.48	1.00
	(2.59)	(2.50)	(0.66)			
Other	0.12	0.04	0.08	0.08	0.55	0.42
	(0.64)	(0.77)	(0.40)			
Alcohol, Tobacco	0.07	-0.12	0.19	0.40	0.52	0.40
	(0.43)	(-0.76)	(1.48)			
N		3,497		1,214	594	581

NOTE: Same notes as in Table A3.1

Table A3.4: CGP Impacts on Expenditure Shares—Large Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Food	-0.015	0.011	**-0.026**	0.710	0.741	0.758
	(-0.823)	(0.664)	(-2.151)			
Clothing	**0.008**	**0.007**	0.001	0.033	0.033	0.027
	(2.744)	(2.413)	(0.383)			
Education	0.004	0.003	0.000	0.024	0.030	0.026
	(0.932)	(0.693)	(0.125)			
Health	**0.011**	0.004	0.007	0.051	0.057	0.048
	(2.540)	(0.985)	(1.711)			
Domestic	-0.023	-0.031	0.008	0.155	0.095	0.114
	(-1.423)	(-1.978)	(0.808)			
Transport/Communication	**0.016**	0.010	0.006	0.013	0.026	0.013
	(3.031)	(1.696)	(1.129)			
Other	0.000	0.001	-0.001	0.002	0.007	0.007

	(0.064)	(0.787)	(-0.364)			
Alcohol, Tobacco	-0.001	-0.006	0.004	0.011	0.010	0.008
	(-0.405)	(-1.635)	(1.681)			
N		3,496		1,213	594	581

NOTE: Same notes as in Table A3.1

Table A3.5: CGP Impacts on Per-Capita Food Expenditures (ZMW 2010 = 100)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Cereals	**2.60**	**4.50**	-1.90	9.52	14.14	11.09
	(2.51)	(3.56)	(-1.85)			
Tubers	-0.17	-0.84	0.67	4.65	5.53	5.40
	(-0.21)	(-1.26)	(0.95)			
Pulses	0.58	**1.16**	-0.59	0.89	2.49	1.97
	(1.46)	(4.77)	(-1.67)			
Fruits, Veg	0.84	0.30	0.54	6.09	9.52	9.02
	(0.79)	(0.36)	(0.40)			
Meat	**3.17**	**2.55**	0.62	5.75	12.63	8.83
	(4.29)	(3.39)	(0.78)			
Dairy	**0.43**	**0.68**	-0.25	0.69	1.06	0.63
	(2.19)	(3.72)	(-1.68)			
Baby Foods	-0.03	0.02	-0.05	0.01	0.01	0.03
	(-0.93)	(0.89)	(-1.57)			
Sugars	0.53	**1.21**	-0.68	0.68	2.31	1.54
	(1.51)	(7.46)	(-1.93)			
Fats, Oil, Other	-0.50	**1.65**	-2.15	1.26	2.78	3.06
	(-0.39)	(6.23)	(-1.70)			
N		7,064		2,459	1,178	1,185

NOTE: Same notes as in Table A3.1

Annex 4: Household Assets, Agricultural Inputs, and Livestock

Household Assets

Table A4.1: Impact of CGP on Asset Ownership (Share)—Small Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Assets Index	**0.428**	**0.424**	0.005	-0.318	0.265	-0.241
	(5.201)	(5.927)	(0.066)			
Bed	**0.108**	**0.205**	**-0.097**	0.155	0.392	0.202
	(2.600)	(4.384)	(-2.253)			
Mattress	**0.144**	**0.245**	**-0.101**	0.112	0.401	0.210
	(3.388)	(6.054)	(-2.346)			
Net	0.071	0.005	0.066	0.782	0.834	0.709
	(1.583)	(0.101)	(1.896)			
Table	0.024	0.004	0.020	0.143	0.151	0.078
	(0.631)	(0.107)	(0.647)			
Sofa	**0.059**	**0.057**	0.002	0.027	0.072	0.025
	(2.663)	(2.536)	(0.071)			
Radio	**0.054**	**0.108**	-0.054	0.085	0.166	0.111
	(2.067)	(3.191)	(-1.445)			
TV	0.010	0.016	-0.006	0.010	0.042	0.010
	(1.521)	(1.875)	(-0.576)			
DVD	**0.013**	0.006	0.007	0.011	0.035	0.008
	(2.456)	(1.408)	(0.630)			
Cell	0.015	-0.027	**0.042**	0.069	0.135	0.088
	(0.838)	(-1.499)	(2.257)			
Watch	0.007	0.015	-0.008	0.021	0.013	0.009
	(0.799)	(1.300)	(-0.614)			
Iron	**0.046**	0.032	0.014	0.018	0.057	0.017
	(2.496)	(1.892)	(0.619)			
Solar Panel	**0.077**	**0.091**	-0.014	0.021	0.113	0.040
	(3.614)	(4.314)	(-0.400)			
N		3,559		1,243	584	604

NOTE: Estimations use difference-in-difference modeling among panel households. Robust t-statistics clustered at the CWAC level are in parentheses. Bold indicates that they are significant at $p < .05$. All estimations control for household size, recipient age, education and marital status, districts, household demographic composition and a vector of cluster-level prices.

Table A4.2: Impact of CGP on Asset Ownership (Share)—Large Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Assets Index	**0.502**	**0.441**	0.061	-0.073	0.616	0.034
	(5.613)	(5.725)	(0.915)			
Bed	**0.219**	**0.227**	-0.007	0.245	0.534	0.282
	(4.933)	(5.329)	(-0.181)			
Mattress	**0.204**	**0.237**	-0.033	0.188	0.519	0.272
	(5.144)	(5.520)	(-0.741)			
Net	**0.108**	0.061	0.047	0.820	0.855	0.721
	(3.254)	(1.665)	(1.954)			
Table	0.038	**0.102**	-0.064	0.183	0.187	0.139
	(0.951)	(2.624)	(-1.704)			
Sofa	**0.027**	0.007	0.020	0.040	0.103	0.043
	(2.066)	(0.583)	(1.712)			
Radio	**0.091**	**0.073**	0.018	0.130	0.253	0.143
	(2.663)	(2.078)	(0.479)			
TV	0.010	**0.022**	-0.012	0.026	0.064	0.031
	(1.070)	(2.341)	(-1.309)			
DVD	0.004	0.006	-0.002	0.023	0.054	0.029
	(0.559)	(0.672)	(-0.202)			
Cell	0.047	0.030	0.018	0.099	0.195	0.153
	(1.593)	(0.848)	(0.588)			
Watch	0.004	0.007	-0.003	0.045	0.032	0.024
	(0.280)	(0.551)	(-0.205)			
Iron	0.018	0.026	-0.009	0.047	0.086	0.055
	(0.880)	(1.490)	(-0.389)			
Solar Panel	**0.056**	**0.072**	-0.017	0.028	0.123	0.062
	(2.436)	(3.094)	(-0.643)			
N		3,494		1,213	594	581

NOTE: Same notes as in Table A4.1

Agricultural Tools

Table A4.3: Impact of CGP on Agricultural Implements (Share)—Small Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Index	**0.172**	**0.188**	-0.016	-0.321	0.096	-0.154
	(2.199)	(2.261)	(-0.190)			
Axe	-0.016	0.001	-0.017	0.741	0.813	0.793
	(-0.317)	(0.028)	(-0.345)			
Pick	0.027	-0.003	0.030	0.022	0.072	0.028
	(1.282)	(-0.147)	(1.549)			
Hoe	-0.005	0.004	-0.009	0.898	0.955	0.949
	(-0.191)	(0.195)	(-0.341)			
Hammer	0.017	0.026	-0.009	0.040	0.069	0.041
	(0.956)	(1.569)	(-0.442)			
Shovel	-0.005	0.006	-0.012	0.033	0.089	0.050

	(-0.406)	(0.439)	(-0.976)			
Plough	0.016	**0.041**	-0.024	0.050	0.060	0.040
	(1.176)	(2.183)	(-1.266)			
N		3,567		1,245	584	604

NOTE: Same notes as in Table A4.1

Table A4.4: Impact of CGP on Agricultural Implements (Share)—Large Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Index	**0.378**	**0.319**	0.059	-0.049	0.502	0.079
	(3.612)	(3.351)	(0.818)			
Axe	0.016	0.002	0.015	0.817	0.865	0.828
	(0.346)	(0.046)	(0.369)			
Pick	**0.054**	0.021	0.033	0.028	0.071	0.036
	(2.464)	(1.195)	(1.525)			
Hoe	0.008	0.009	-0.002	0.926	0.961	0.972
	(0.383)	(0.577)	(-0.101)			
Hammer	**0.124**	**0.063**	**0.061**	0.055	0.157	0.053
	(4.221)	(2.731)	(2.097)			
Shovel	**0.058**	0.045	0.013	0.071	0.158	0.071
	(2.035)	(1.701)	(0.561)			
Plough	0.024	**0.039**	-0.016	0.079	0.093	0.061
	(1.381)	(2.415)	(-0.910)			
N		3,473		1,205	594	578

NOTE: Same notes as in Table A4.1

Table A4.5: Impact of CGP on Agricultural Implements (Number)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Index	**0.273**	**0.251**	0.022	-0.185	0.301	-0.039
	(3.714)	(3.258)	(0.349)			
Axe	**0.189**	0.163	0.026	1.126	1.462	1.222
	(2.020)	(1.906)	(0.319)			
Pick	**0.064**	0.030	0.034	0.036	0.097	0.043
	(3.405)	(1.213)	(1.382)			
Hoe	**0.249**	**0.294**	-0.045	1.523	2.382	2.112
	(2.326)	(3.368)	(-0.460)			
Hammer	**0.077**	0.04**0**	0.037	0.053	0.135	0.056
	(3.996)	(1.997)	(1.531)			
Shovel	0.122	0.036	0.086	0.062	0.216	0.085
	(1.537)	(1.600)	(1.048)			
Plough	0.014	**0.043**	-0.029	0.070	0.081	0.062

	(0.676)	(2.075)	(-1.611)			
N		7,064		2,459	1,178	1,185

NOTE: Same notes as in Table A4.1

Livestock Ownership

Table A4.6: Impact of CGP on Livestock Ownership (Share)—Small Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Livestock Index	**0.446**	**0.382**	0.064	-0.249	0.184	-0.239
	(6.583)	(4.703)	(0.774)			
Cows	0.028	0.009	0.019	0.047	0.021	0.005
	(1.744)	(0.776)	(0.976)			
Cattle	**0.093**	**0.103**	-0.010	0.076	0.164	0.083
	(3.780)	(3.324)	(-0.268)			
Goats	0.014	0.017	-0.003	0.014	0.034	0.007
	(1.761)	(1.818)	(-0.214)			
Chicken	**0.200**	0.068	**0.132**	0.371	0.551	0.363
	(3.676)	(0.992)	(2.374)			
Ducks	0.020	**0.031**	-0.011	0.019	0.022	0.015
	(1.576)	(2.409)	(-0.691)			
N		3,566		1,244	584	604

NOTE: Same notes as in Table A4.1

Table A4.7: Impact of CGP on Livestock Ownership (Share)—Large Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Livestock Index	**0.561**	**0.464**	0.096	0.003	0.565	-0.073
	(5.500)	(4.753)	(1.144)			
Cows	**0.142**	**0.047**	0.096	0.060	0.040	0.002
	(3.495)	(2.438)	(1.607)			
Cattle	**0.111**	**0.103**	0.008	0.108	0.210	0.108
	(3.746)	(3.415)	(0.235)			
Goats	0.010	0.018	-0.009	0.031	0.084	0.024
	(0.547)	(0.931)	(-0.572)			
Chicken	**0.265**	**0.198**	0.067	0.483	0.638	0.425
	(3.964)	(3.232)	(1.414)			
Ducks	**0.037**	0.035	0.002	0.044	0.051	0.029
	(2.133)	(1.983)	(0.086)			
N		3,494		1,211	594	581

NOTE: Same notes as in Table A4.1

Table A4.8: Impact of CGP on Livestock Ownership (Number)—Small Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Livestock Index	**0.446**	**0.382**	0.064	-0.249	0.184	-0.239
	(6.583)	(4.703)	(0.774)			
Cows	0.038	0.003	0.035	0.092	0.045	0.008
	(0.885)	(0.071)	(1.024)			
Cattle	**0.461**	**0.377**	0.083	0.225	0.675	0.333
	(2.539)	(3.136)	(0.467)			
Goats	0.050	**0.171**	-0.120	0.031	0.092	0.022
	(1.362)	(3.203)	(-1.917)			
Chicken	**2.001**	**1.087**	**0.914**	1.406	3.659	1.717
	(4.961)	(2.424)	(2.155)			
Ducks	0.132	**0.192**	-0.060	0.096	0.120	0.045
	(1.881)	(2.339)	(-1.204)			
N		3,566		1,244	584	604

NOTE: Same notes as in Table A4.1

Table A4.9: Impact of CGP on Livestock Ownership (Number)—Large Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Livestock Index	**0.561**	**0.464**	0.096	0.003	0.565	-0.073
	(5.500)	(4.753)	(1.144)			
Cows	-0.211	-0.173	-0.038	0.308	0.116	0.012
	(-0.897)	(-0.844)	(-0.567)			
Cattle	0.289	0.394	-0.105	0.484	0.923	0.417
	(0.955)	(1.334)	(-0.566)			
Goats	0.080	**0.153**	-0.073	0.082	0.276	0.112
	(1.066)	(2.846)	(-1.119)			
Chicken	**2.583**	**1.262**	**1.321**	2.427	4.914	2.196
	(4.510)	(2.405)	(2.499)			
Ducks	**0.245**	**0.278**	-0.033	0.168	0.269	0.138
	(2.239)	(2.581)	(-0.369)			
N		3,494		1,211	594	581

NOTE: Same notes as in Table A4.1

Annex 5: Children Under 5

Table A5.1: Impact of CGP on Child Health by Wave

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Diarrhea last two weeks	-0.007	**-0.042**	**0.034**	0.190	0.085	0.077
	(-0.411)	(-2.202)	(2.088)			
Fever last two weeks	-0.001	-0.008	0.007	0.234	0.125	0.122
	(-0.016)	(-0.231)	(0.285)			
ARI (cough) last two weeks	-0.000	-0.031	0.030	0.202	0.069	0.072
	(-0.013)	(-1.413)	(1.223)			
Preventive care at well-baby clinic or under 5 clinic	0.016	-0.030	0.046	0.778	0.767	0.716
	(0.408)	(-0.743)	(1.345)			
N		10,664		4,039	1,683	1,692

NOTE: Estimations use difference-in-difference modeling among panel households. Robust t-statistics clustered at the CWAC level are in parentheses. Bold indicates that they are significant at $p < .05$. All estimations control for age and gender, as well as household size, recipient age, education and marital status, districts, household demographic composition and a vector of cluster-level prices.

Table A5.2: Impact of CGP on Child Health Treatment

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Sought treatment for diarrhea	-0.035	-0.013	-0.022	0.755	0.797	0.815
	(-0.378)	(-0.177)	(-0.233)			
Sought treatment for fever	-0.020	-0.002	-0.017	0.736	0.806	0.796
	(-0.297)	(-0.031)	(-0.207)			
Sought treatment for ARI	-0.053	**-0.161**	0.108	0.358	0.224	0.190
	(-0.574)	(-2.428)	(1.350)			
N		1,281		818	116	121

NOTE: Same notes as in Table A5.1

Table A5.3: Impact of CGP on Anthropometrics

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Weight-for-Height (z-score)	0.054	0.112	-0.057	-0.176	0.066	0.073
	(0.726)	(1.616)	(-0.890)			
Height-for-Age (z-score)	0.013	0.071	-0.058	-1.443	-1.441	-1.435
	(0.117)	(0.738)	(-0.554)			
Weight-for-Age (z-score)	0.053	0.134	-0.081	-0.924	-0.811	-0.793
	(0.789)	(1.903)	(-1.259)			
Wasted (%)	0.006	-0.007	0.013	0.062	0.045	0.040
	(0.486)	(-0.694)	(1.032)			
Stunted (%)	0.014	-0.014	0.028	0.358	0.356	0.359
	(0.512)	(-0.533)	(1.039)			
Underweight (%)	-0.001	-0.023	0.021	0.168	0.137	0.133
	(-0.064)	(-1.260)	(1.233)			
N		10,443		3,832	1,687	1,733

NOTE: Same notes as in Table A5.1

Annex 6: Older Child Outcomes by Gender

Table A6.1: Comparison of CGP Impacts on Basic Needs Met by Wave, Girls Ages 5–17

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
All needs met	**0.325**	**0.390**	-0.065	0.103	0.630	0.325
	(5.053)	(5.278)	(-1.434)			
Shoes	**0.307**	**0.358**	-0.051	0.137	0.649	0.352
	(5.162)	(4.980)	(-1.100)			
Blanket	**0.165**	**0.191**	-0.027	0.545	0.957	0.827
	(4.641)	(5.674)	(-1.758)			
Two sets	**0.064**	**0.109**	**-0.044**	0.616	0.966	0.932
	(2.091)	(4.858)	(-2.995)			
N		7,518		2,342	1,358	1,448

NOTE: Estimations use difference-in-difference modeling among panel households. Robust t-statistics clustered at the CWAC level are in parentheses. Bold indicates that they are significant at p < .05. All estimations control for gender, age, household size, recipient age, education and marital status, districts, household demographic composition and a vector of cluster-level prices.

Table A6.2: Comparison of CGP Impacts on Basic Needs Met by Wave, Boys Ages 5–17

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
All needs met	**0.325**	**0.390**	-0.065	0.103	0.630	0.325
	(5.053)	(5.278)	(-1.434)			
Shoes	**0.307**	**0.358**	-0.051	0.137	0.649	0.352
	(5.162)	(4.980)	(-1.100)			
Blanket	**0.165**	**0.191**	-0.027	0.545	0.957	0.827
	(4.641)	(5.674)	(-1.758)			
Two sets	**0.064**	**0.109**	**-0.044**	0.616	0.966	0.932
	(2.091)	(4.858)	(-2.995)			
N		7,518		2,342	1,358	1,448

NOTE: Same notes as in Table A6.1.

Table A6.3: Comparison of CGP Impacts on Older Child Labor by Wave, Primary School–Aged Girls (7–14)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Engaged in any work	0.003	0.060	-0.057	0.598	0.904	0.931
	(0.072)	(1.782)	(-1.725)			
Engaged in paid work	-0.009	-0.005	-0.004	0.024	0.004	0.016
	(-1.644)	(-1.063)	(-0.922)			
Unpaid hours	-0.733	-1.112	0.379	21.062	14.677	14.112
	(-0.218)	(-0.352)	(0.183)			
N		3,715		878	768	805

NOTE: Same notes as in Table A6.1.

Table A6.4: Comparison of CGP Impacts on Older Child Labor by Wave, Primary School–Aged Boys (7–14)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Engaged in any work	0.004	**0.087**	**-0.083**	0.580	0.881	0.903
	(0.080)	(2.075)	(-2.229)			
Engaged in paid work	-0.005	**-0.010**	0.005	0.022	0.011	0.013
	(-0.811)	(-2.270)	(1.128)			
Unpaid hours	0.357	-3.309	3.666	21.362	15.468	13.744
	(0.096)	(-0.885)	(1.853)			
N		3,679		863	745	816

NOTE: Same notes as in Table A6.1.

Table A6.5: Comparison of CGP Impacts on Older Child Labor by Wave, Secondary School–Aged Girls (15–17)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Engaged in any work	-0.001	0.028	-0.028	0.810	0.970	0.988
	(-0.012)	(1.009)	(-0.857)			
Engaged in paid work	0.014	-0.037	0.051	0.105	0.045	0.035
	(0.406)	(-1.482)	(2.116)			
Unpaid hours	-3.837	-4.836	0.999	28.364	21.429	21.776
	(-0.669)	(-0.861)	(0.231)			
N		899		261	191	165

NOTE: Same notes as in Table A6.1.

Table A6.6: Comparison of CGP Impacts on Older Child Labor by Wave, Secondary School–Aged Boys (15–17)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Engaged in any work	0.022	0.022	-0.000	0.770	0.991	0.989
	(0.911)	(1.133)	(-0.058)			
Engaged in paid work	-0.019	-0.009	-0.010	0.117	0.047	0.070
	(-0.481)	(-0.250)	(-0.279)			
Unpaid hours	-2.356	-1.433	-0.922	26.572	20.135	19.367
	(-0.369)	(-0.224)	(-0.254)			
N		900		208	207	180

NOTE: Same notes as in Table A6.1.

Table A6.7: Comparison of CGP Impacts on Child Education by Wave, Primary School–Aged Girls (7–14)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Currently Enrolled (%)	**0.057**	-0.004	**0.062**	0.751	0.868	0.835
	(2.410)	(-0.152)	(2.528)			
Full attendance prior week (%)	**0.074**	0.061	0.013	0.806	0.887	0.820
	(2.258)	(1.803)	(0.366)			
Number of days in attendance prior week (from 0-5)	**0.391**	0.195	0.196	3.368	4.131	3.885
	(2.409)	(1.090)	(1.314)			
N		4,683		1,469	848	867

NOTE: Same notes as in Table A6.1.

Table A6.8: Comparison of CGP Impacts on Child Education by Wave, Primary School–Aged Boys (7–14)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Currently Enrolled (%)	**0.084**	0.016	**0.068**	0.732	0.854	0.780
	(3.239)	(0.569)	(3.163)			
Full attendance prior week (%)	0.074*	0.060	0.014	0.775	0.890	0.803
	(2.124)	(1.505)	(0.400)			
Number of days in attendance prior week (from 0-5)	**0.572**	0.224	**0.348**	3.240	4.089	3.561
	(3.132)	(1.223)	(2.590)			
N		4,768		1,494	846	904

NOTE: Same notes as in Table A6.1.

Table A6.9: Comparison of CGP Impacts on Child Education by Wave, Secondary School–Aged Girls (15–17)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Currently Enrolled (%)	0.072	-0.034	0.106	0.579	0.780	0.661
	(0.922)	(-0.429)	(1.614)			
Full attendance prior week (%)	-0.025	-0.069	0.044	0.819	0.871	0.826
	(-0.341)	(-0.953)	(0.616)			
Number of days in attendance prior week (from 0-5)	0.254	-0.251	0.505	2.548	3.774	3.090
	(0.669)	(-0.683)	(1.677)			
N		978		332	186	166

NOTE: Same notes as in Table A6.1.

Table A6.10: Comparison of CGP Impacts on Child Education by Wave, Secondary School–Aged Boys (15–17)

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Currently Enrolled (%)	-0.089	-0.076	-0.013	0.752	0.859	0.818
	(-1.385)	(-1.347)	(-0.209)			
Full attendance prior week (%)	-0.012	0.004	-0.016	0.786	0.852	0.837
	(-0.167)	(0.045)	(-0.212)			
Number of days in attendance prior week (from 0-5)	-0.486	-0.380	-0.106	3.325	4.090	3.872
	(-1.464)	(-1.228)	(-0.317)			
N		971		271	199	179

NOTE: Same notes as in Table A6.1.

Annex 7: Agricultural Production

Table A7.1: Impact of CGP on Crop Input Use and Land Use (ZK)—Small Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Operated land (has)	0.026	**0.175**	-0.149	0.444	0.662	0.632
	(0.312)	(2.050)	(-1.634)			
Total crop exp	13.223	**31.474**	-18.251	11.649	41.120	27.569
	(1.013)	(4.136)	(-1.300)			
Exp seed	10.592	**9.284**	1.308	3.835	18.689	7.984
	(1.047)	(4.016)	(0.120)			
Exp hired labor	4.719	**8.709**	-3.989	2.361	14.512	10.032
	(1.093)	(2.831)	(-0.882)			
Exp pesticides	0.078	0.143	-0.065	0.044	0.000	0.021
	(0.837)	(1.472)	(-1.209)			
Exp fertilizer	1.182	**7.525**	**-6.343**	0.703	4.146	3.575
	(0.425)	(2.093)	(-2.045)			
Other crop exp	1.993	**14.682**	-12.689	7.111	21.309	18.657
	(0.324)	(3.245)	(-1.893)			
N		3,147		1,245	387	408

NOTE: Estimations use difference-in-difference modeling among panel households. Robust t-statistics clustered at the CWAC level are in parentheses. Bold indicates that they are significant at $p < .05$. All estimations control for household size, recipient age, education and marital status, districts, household demographic composition and a vector of cluster-level prices.

Table A7.2: Impact of CGP on Crop Input Use and Land Use (ZK)—Large Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Operated land (has)	**0.355**	**0.250**	0.105	0.561	1.016	0.695
	(3.282)	(2.159)	(1.471)			
Total crop exp	7.981	20.818	-12.837	24.562	54.883	28.534
	(0.526)	(1.309)	(-1.335)			
Exp seed	2.389	**6.668**	-4.280	6.382	14.768	10.671
	(0.709)	(2.401)	(-1.375)			
Exp hired labor	-2.405	5.554	-7.959	10.145	19.006	6.366
	(-0.256)	(0.591)	(-1.433)			
Exp pesticides	-0.305	-0.174	-0.132	0.000	0.275	0.464
	(-0.661)	(-0.668)	(-0.244)			
Exp fertilizer	5.198	6.351	-1.153	1.837	9.796	5.362
	(1.456)	(1.315)	(-0.390)			
Other crop exp	3.491	7.716	-4.225	16.343	35.334	14.569
	(0.283)	(0.670)	(-0.584)			
N		3,917		1,214	791	777

NOTE: Same notes as in Table A7.1.

Table A7.3: Impact of CGP on Crop Production (Share)—Small Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Maize	0.043	0.043	0.001	0.536	0.722	0.655
	(0.705)	(0.852)	(0.013)			
Cassava	0.051	0.008	0.043	0.215	0.304	0.320
	(0.927)	(0.214)	(0.962)			
Rice	0.015	**0.111**	**-0.096**	0.164	0.161	0.163
	(0.579)	(3.501)	(-2.859)			
Millet	0.023	0.000	0.023	0.067	0.045	0.041
	(0.877)	(0.022)	(0.818)			
Groundnut	**0.048**	**0.062**	-0.013	0.027	0.066	0.050
	(2.525)	(2.849)	(-0.501)			
Sweet potatoes	-0.001	0.006	-0.008	0.035	0.024	0.028
	(-0.201)	(0.512)	(-0.635)			
Sorghum	-0.001	0.012	-0.014	0.039	0.027	0.050
	(-0.171)	(1.166)	(-1.152)			
Other beans	0.008	0.016	-0.007	0.010	0.015	0.014
	(1.356)	(1.781)	(-0.827)			
N		2,910		1,245	335	362

NOTE: Same notes as in Table A7.1.

Table A7.4: Impact of CGP on Crop Production (Share)—Large Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Maize	**0.107**	**0.125**	-0.018	0.572	0.755	0.671
	(2.041)	(2.732)	(-0.430)			
Cassava	-0.042	-0.063	0.021	0.311	0.352	0.404
	(-1.033)	(-1.344)	(0.669)			
Rice	0.019	0.034	-0.015	0.163	0.170	0.159
	(0.705)	(0.966)	(-0.608)			
Millet	-0.004	0.018	-0.022	0.059	0.061	0.054
	(-0.405)	(1.203)	(-1.577)			
Groundnut	0.005	0.019	-0.014	0.071	0.079	0.080
	(0.239)	(0.913)	(-0.700)			
Sweet potatoes	0.029	-0.008	**0.038**	0.052	0.042	0.031
	(1.529)	(-0.509)	(2.258)			
Sorghum	**0.018**	0.015	0.003	0.032	0.045	0.021
	(2.631)	(1.931)	(0.378)			
Other beans	0.000	0.005	-0.005	0.016	0.014	0.018
	(0.026)	(0.629)	(-0.695)			
N		3,661		1,214	719	703

NOTE: Same notes as in Table A7.1.

Table A7.5: Impact of CGP on Crop Production (kg and 2012 ZMW)—Small Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Maize	33.889	**47.797**	-13.907	122.537	204.403	162.749
	(0.983)	(2.177)	(-0.409)			
Cassava	30.701	-16.000	46.700	107.253	248.716	214.862
	(0.399)	(-0.326)	(0.622)			
Rice	19.041	**62.590**	**-43.549**	75.094	57.851	52.362
	(0.816)	(2.167)	(-2.079)			
Millet	2.217	0.236	1.980	8.239	4.537	8.550
	(0.456)	(0.057)	(0.401)			
Groundnut	3.059	9.190	-6.131	5.973	13.582	14.309
	(0.290)	(1.959)	(-0.550)			
Sweet potatoes	3.808	2.561	1.247	5.667	6.567	4.917
	(0.742)	(0.383)	(0.180)			
Sorghum	2.723	4.707	-1.985	6.651	3.657	7.638
	(0.448)	(0.905)	(-0.531)			
Other beans	-0.091	0.506	-0.597	0.839	1.119	2.210
	(-0.071)	(0.592)	(-0.525)			
Value of harvest	348.930	100.225	248.705	293.880	801.334	472.171
	(1.300)	(1.536)	(0.890)			
N		2,910		1,245	335	362

NOTE: Same notes as in Table A7.1.

Table A7.6: Impact of CGP on Crop Production (kg and 2012 ZMW)—Large Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Maize	**147.534**	94.686	52.848	178.429	330.563	186.799
	(2.719)	(1.918)	(1.172)			
Cassava	12.464	-86.558	99.023	195.054	370.841	323.435
	(0.179)	(-1.254)	(1.405)			
Rice	49.342	66.040	-16.697	84.881	84.013	46.337
	(1.380)	(1.585)	(-1.039)			
Millet	-3.674	6.148	-9.822	6.779	6.439	9.787
	(-1.293)	(1.595)	(-1.881)			
Groundnut	14.739	-3.523	18.262	17.362	27.524	23.300
	(1.421)	(-0.283)	(1.257)			
Sweet potatoes	11.804	-7.593	19.398	7.026	12.740	6.046
	(1.877)	(-0.715)	(1.720)			
Sorghum	3.660	3.584	0.076	4.580	4.221	2.575
	(1.248)	(1.177)	(0.039)			
Other beans	-1.027	-0.675	-0.352	1.183	1.252	1.657
	(-0.836)	(-0.433)	(-0.236)			
Value of harvest	**262.942**	145.477	117.464	414.183	846.631	599.628
	(2.190)	(1.379)	(1.192)			
N		3,661		1,214	719	703

NOTE: Same notes as in Table A7.1.

Table A7.7: Impact of CGP on Agricultural Production—Small Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Value of sales (ZMW)	-67.202 (-0.293)	**73.329** (2.929)	-140.532 (-0.606)	57.053	212.089	264.001
% of crops sold	-0.177 (-0.979)	**0.072** (2.400)	-0.249 (-1.359)	0.104	0.099	0.259
Value consumed At home (ZMW)	176.034 (1.374)	-3.351 (-0.121)	179.385 (1.334)	155.597	369.088	205.710
% of crops consumed	-0.032 (-0.679)	-0.066 (-1.270)	0.034 (0.881)	0.721	0.602	0.676
N		2,533		931	320	342

NOTE: Same notes as in Table A7.1.

Table A7.8: Impact of CGP on Agricultural Production—Large Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff 30M–24M (3)	Baseline Mean (4)	30M Treated Mean (5)	30M Control Mean (6)
Value of sales (ZMW)	64.986 (1.113)	83.905 (1.716)	-18.919 (-0.353)	79.531	186.749	139.329
% of crops sold	-0.010 (-0.180)	**0.052** (2.163)	-0.062 (-1.046)	0.098	0.116	0.149
Value consumed At home (ZMW)	53.065 (1.216)	44.714 (1.225)	8.351 (0.217)	206.059	318.777	259.353
% of crops consumed	**-0.086** (-2.027)	-0.020 (-0.453)	-0.066 (-1.713)	0.665	0.559	0.638
N		3,312		995	670	656

NOTE: Same notes as in Table A7.1.

Annex 8: Nonfarm Enterprises

Table A8.1: CGP Impacts on Nonfarm Enterprises (NFE)—Small Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff (1)–(2) (3)	24M Means Treated (4)	24M Means Control (5)	30M Means Treated (6)	30M Means Control (7)
HH operates NFE	**0.121**	**0.112**	0.008	0.44	0.30	0.46	0.31
	(2.515)	(2.485)	(0.131)				
Months in operation since Oct 2012	0.352	0.473	-0.121	7.2	6.6	5.2	4.9
	(0.858)	(1.048)	(-0.237)				
Total monthly profit[1]	19.4	**39.1**	-19.7	143.9	94.8	125.8	117.6
	(1.077)	(2.655)	(-0.974)				
N		1,810		526	322	579	383

NOTE: Estimations use single difference modeling. Robust t-statistics clustered at the CWAC level are in parentheses. Bold indicates that they are significant at p < .05. All estimations control for household size, recipient age, education and marital status, districts, and household demographic composition. 1. The highest 5% values for this outcome were discarded due to unlikely large values for this population.

Table A8.2: CGP Impacts on Nonfarm Enterprises (NFE)—Large Households

Dependent Variable	30-Month Impact (1)	24-Month Impact (2)	Diff (1)–(2) (3)	24M Means Treated (4)	24M Means Control (5)	30M Means Treated (6)	30M Means Control (7)
HH operates NFE	**0.161**	**0.208**	-0.049	0.50	0.28	0.51	0.33
	(4.140)	(5.287)	(-0.889)				
Months in operation since Oct 2012	0.213	0.728	-0.515	7.7	7.0	5.4	5.2
	(0.635)	(1.373)	(-0.798)				
Total monthly profit[1]	17.665	26.097	-8.432	152.0	120.1	145.6	117.9
	(1.437)	(1.741)	(-0.407)				
N		1,810		526	322	579	383

NOTE: Same notes as Table A8.1